Carleton Place District Fisheries Management Plan

1987 - 2000

Ontario

Ministry of Natural Resources

Vincent G. Kerrio
Minister

Carleton Place District Fisheries Management Plan

1987 - 2000

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PREFACE

The purpose of the Carleton Place District Fisheries Management Plan is to outline the long-term direction of fisheries management efforts in the Carleton Place District for the period 1987-2000. Further, it provides a way to measure the accomplishments of the district fisheries management program by both the managers and the public.

This document briefly describes the planning framework followed and provides an overview of the fisheries resources of the Carleton Place District, including significant information affecting their management. Fisheries management objectives and targets are stated and strategies and tactics to meet them are identified. An implementation schedule describes in detail how, when and where fisheries management activities in the five year period 1987-1991 are planned to be carried out. The actual timing and cost of specific projects will be determined in annual work plans.

Yearly updates of the implementation schedule and periodic revisions will keep the District Fisheries Management Plan current and responsive to changing needs and conditions.

J. Hellers
District Manager

August 17, 1988
Date

J. C. Thomas
Regional Director

Sept 12/88
Date

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1.0 INTRODUCTION

The district fisheries management plan is composed within the overall resource planning and management system of the Ministry of Natural Resources. The planning horizon extends to the year 2000 and will be subdivided into separate 5 year operating periods, which are identified in Implementation Schedules. The Plan will be amended in 5 year intervals, as required.

Resource management planning ensures programs and activities are integrated so that specific objectives can be achieved and to provide managers with direction on how to manage a particular resource. Public involvement is an integral part of the planning procedure.

1.1 PURPOSE

The purpose of this plan is to outline long-term fisheries management direction, and to identify specific short-term management activities, to be carried out on waters within the Carleton Place District.

1.1.1 DESCRIPTION

The Carleton Place District encompasses an area of 5,891 square km of land and water (Figure 1.1.1). The District is composed of Lanark County and the Regional Municipality of Ottawa-Carleton, which includes the cities of Ottawa, Kanata, Nepean, Gloucester and Vanier. All waters in the District have been considered, including White, Silver and Brooks Lakes in their entirety, but excluding Bob's Lake. Only those portions of the Ottawa River, the Rideau River and Lower and Big Rideau Lakes which are within Lanark County and the Regional Municipality of Ottawa-Carleton are included.

1.2 PLANNING PROCESS

The Carleton Place District Fisheries Management Plan arises from the Southern Ontario Coordinated Program Strategy (SOCPS), which outlines the Ministry's intent to provide optimum use of the resources with a minimum conflict to achieve established objectives; the Strategic Planning for

Figure 1.1.1 DISTRICT MAP: PROVINCIAL & REGIONAL SETTING

Ontario Fisheries (SPOF) which identifies overall fisheries management principles and technical direction; and finally the District Land Use Guidelines (DLUG) which provides targets and program direction for specific resource management such as fisheries plans at the District level.

DLUG targets for fish production and fisheries oriented recreation will be amended as a result of more up to date information. Other documents, such as timber management plans and the strategy for inland lake trout management in southeastern Ontario were also considered.

The plan provides details on specific management strategies and tactics formulated to achieve local fisheries targets. Included is an implementation schedule which outlines tactics required to fulfill fisheries management objectives over the next five year period. Annual fisheries work plans will be formulated in accordance with this schedule.

This plan adheres to current Ministry of Natural Resources policies and is founded on an integrated resource management approach. The integrated resource management approach encourages multiple use but coordinates various programs to ensure that conflicts are minimized and management activities that benefit several programs are encouraged. An integrated approach to fisheries management is critical since numerous other issues and activities have a direct impact on local fisheries.

1.3 COLLECTION AND ANALYSIS OF BACKGROUND INFORMATION

As a prerequisite for the planning process a comprehensive background document was prepared. This document presents detailed data on the Carleton Place District's fisheries and includes the following information:

- limnological details of individual waters
- production capacity calculations
- production impediments
- present use data
- a valuation of the fisheries resource
- future demand projections
- target refinement
- an identification of issues and problems
- present fisheries management practices

- a listing and evaluation of management options
- a review of individual management techniques.

This district fisheries management information base was summarized in a document called "Background Information and Optional Management Strategies, 1985 - 2000, A Summary".

1.4 PUBLIC CONSULTATION

An elaborate system for public participation in the planning process was set up with opportunities for public review and comment at several steps (App. 13). The process included structured meetings, presentations to special interest groups, the wide distribution of tabloids and questionnaires, discussions with individual citizens, and resulted in the production of two district reports.

2.0 DISTRICT FISHERIES PERSPECTIVE

2.1 THE RESOURCE BASE

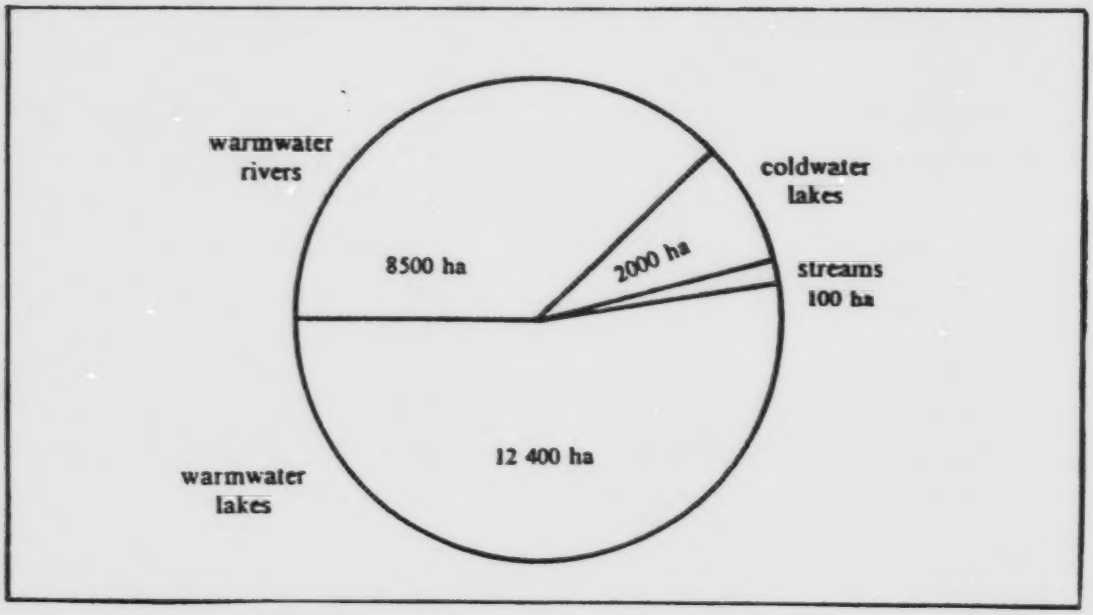
The Carleton Place District is located in the transition zone between the Precambrian Shield, which is relatively infertile, and the more productive South Eastern Lowlands. The total area of land and water is 589,100 hectares and contains approximately 669,000 permanent residents (Background Information, Lanark and Ottawa District Land Use Strategy MNR 1980).

There are 101 manageable and 75 presumed unmanageable public lakes such as swales and beaver ponds as well as 105 rivers and streams in the District. Combined they have a total estimated area of 23,000 ha. The four major water systems passing through the District flow east and north to the Ottawa River. They are: Mississippi River, Rideau River, Madawaska River and the South Nation River.

Nine percent of the total water area is found in cold-water lakes, 54% in warm-water lakes, 36% in rivers and streams and the remainder in small ponds (Figure 2.1).

In addition the Carleton Place District contains 50 managed private ponds. The average pond size was 0.09 ha. These ponds provide considerable private recreational opportunities, but are not open to the general public.

Figure 2.1 Carleton Place District Waters



2.1.1 FISHERY CLASSIFICATION

Three classes of fisheries are identified. Trophy and Wilderness Fisheries, (Class 1) are waters that are managed for high quality angling by virtue of a catch rate above two fish per day, or a specific trophy species and a wilderness type atmosphere.

Principal Fisheries, (Class 2) are waters that are managed primarily for a good angling experience with other recreational values secondary. A catch target of 1.5 fish per day for all sport fish combined would be desirable.

General Recreation, (Class 3) identifies waters that provide a broad range of water related recreational experiences including fishing opportunities. The angling quality is modest; harvest targets per day are about 0.1 for sport fish and 6.0 for yellow perch and pan fish.

All waters are grouped into either a cold-water fishery category or a warm-water fishery category, depending upon the natural characteristics of the lake, stream or river.

A special designation was provided to those waters which contain provincially rare or endangered species, such as the river redhorse sucker, in the lower portion of the Mississippi River.

2.2 PRESENT AND POTENTIAL YIELDS

In the Carleton Place District, which contains relatively large numbers of people, and where inaccessibility is only a localized problem, fish yield and utilization is closely linked. Yield is expressed in kilograms and angler use is expressed in angler days. In order to translate "Allowable" and "Potential" yields into recreational opportunities (angler days), production values were subjected to angling quality standards (See Table 2.2.1).

A definition of the terms potential yield, projected use and current use is presented in the glossary. Yields were calculated based on the productivity and morphometry of waters on the assumption that no major environmental deterioration had taken place. General production data are shown in Tables 2.3 and 2.3.1. Detailed information may be found in Tables 20.0 through 20.7 of the Background Document (MNR Unpublished District Document, 1986).

2.2.1 ANGLING QUALITY STANDARDS

Angling standards were developed to represent the average satisfaction level of the angling public. Angling standards vary significantly between game fish, which are preferred by most anglers, and pan fish. They also vary between lake types. Angling success expectations for game fish on designated trophy and wilderness fisheries (Class 1) are significantly higher than on principal fisheries (Class 2) and on general recreation waters (Class 3). Conversely the expected pan fish catchability is greatest on Class 3 waters, and declines to virtually zero in remote fisheries (Class 1).

Figure 2.1.1 LOCATION AND CLASSIFICATION OF DISTRICT WATERS

CARLETON PLACE DISTRICT

FISHERIES

LEGEND

Sport Fisheries

Coldwater species

- lake
- stream

Cool and warmwater species

- lake

1 Class 1 waterbodies

2 Class 2 waterbodies

3 Class 3 waterbodies

Commercial Fisheries

Special area (walleye spawning)

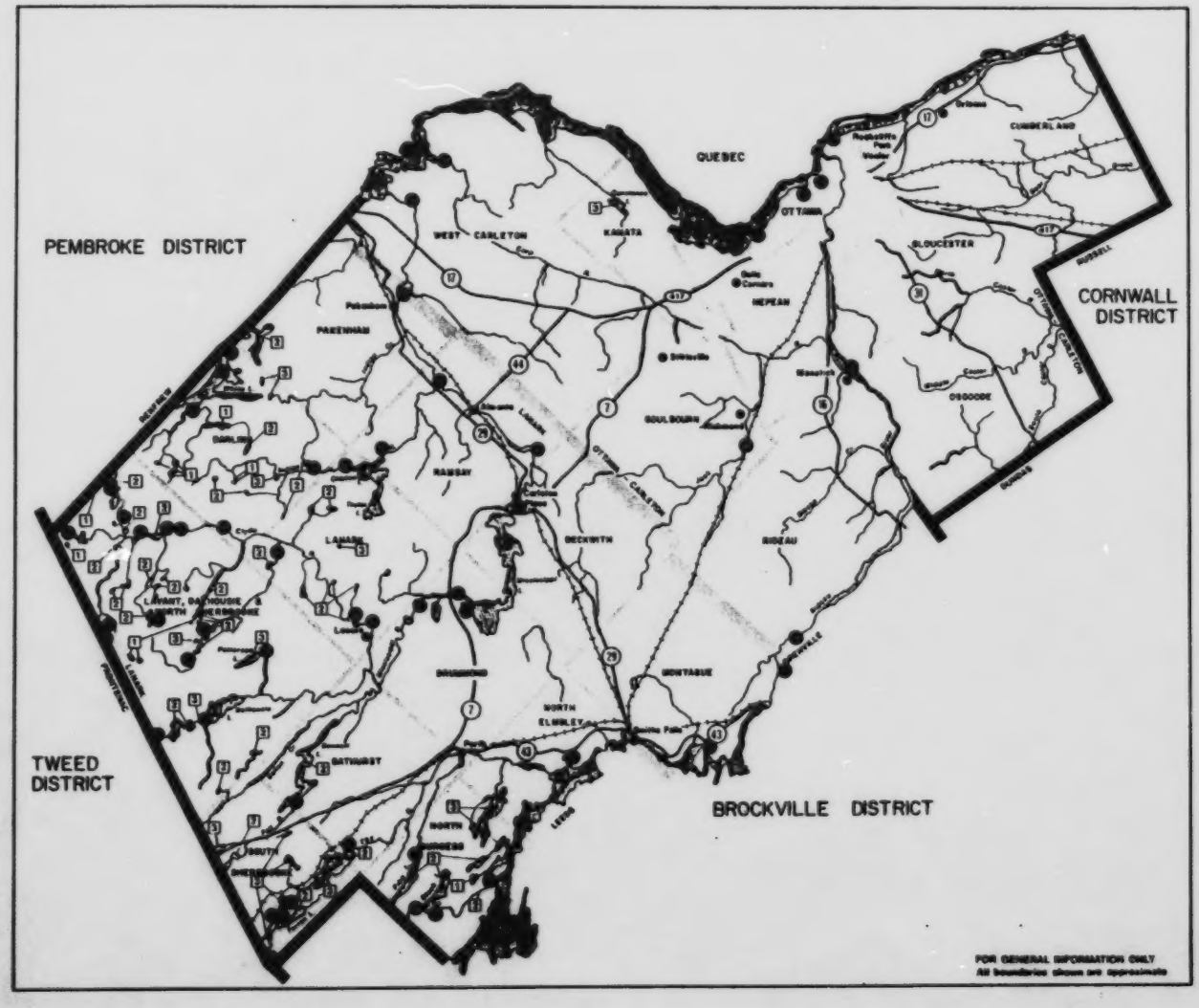


Table 2.2.1 **Minimum Angling Quality Standards, Carleton Place District**

Lake Class	Type	#fish/hr	X	avg. wt	=	kg/hr	X	rod hrs per trip	=	kg/angling opportunity
1	Game fish	0.40	X	0.6	=	0.24	X	4	=	0.96
	Pan fish	none								
2	Game fish	0.30	X	0.6	=	0.18	X	4	=	0.72
	Pan fish	4.00	X	0.11	=	0.44	X	4	=	1.76
3	Game fish	0.10	X	0.6	=	0.06	X	4	=	0.24
	Pan fish	6.00	X	0.11	=	0.66	X	4	=	2.64

2.3 PRESENT AND PROJECTED RESOURCE USE

The projected demand was based on a human population forecast of 12.5% to the year 2000. Current and projected harvests, as well as current and projected resource utilization are presented in Table 2.3. This includes the recreational as well as the commercial fishery.

The projected use, in terms of kg of fish, for the sport fishery is 224,310. While the current potential yield is only 214,254 it is thought that, as a result of a number of management activities such as new regulations, stocking programs andd habitat rehabilitation, fish production and yields will be increased to be able to satisfy the projected demand in the year 2000.

For both the commercial food and baitfish fisheries existing yields are believed to exceed the projected demands by the year 2000.

TABLE 2.3 FISH YIELDS AND RESOURCE USE 1985 - 2000 FROM CARLETON PLACE DISTRICT WATERS

YEAR	1985 CURRENT USE		1985 POTENTIAL YIELD		2000 PROJECTED USE		2000 REFINED TARGET	
Fishery	Kg.	Angler Days	Kg.	Angler Days	Kg.	Angler Days	Kg.	Angler Days
Sport Fishery	199,213	208,369	214,254	228,421	224,310	235,118	224,310	235,118
Commercial Food Fishery	3,500	-	23,000	-	5,000	-	5,000	-
Commercial Bait Fishery	40,000 doz.	-	60,000 doz.	-	50,000 doz.	-	50,000 doz.	-

2.3.1 ANGLING FISHERY, YIELDS, USE AND VALUE

The Provincial Angler Survey (1980) showed that 7% of all anglers in the Carleton Place District are non-residents, while 93% are residents of Ontario. Approximately 30% of anglers are locals, i.e. persons angling within 40 kilometers of their permanent home, as indicated by district creel census.

Approximately 138,000 anglers are using the fisheries resource of the District annually.

Two methods were used to establish a dollar value for the Carleton Place District fishery. Both methods indicate similar values. The first technique, which was utilized by the Ontario Ministry of Industry and Tourism in 1975, establishes the total income generated to the economy by the local sport fishery as $11.1 million, in 1986 funds. The second method, which is used to value individual recreational experiences (Everett Surrender Method) establishes the value of the Carleton Place Fishery as $12.8 million, in 1986 funds.

Five percent of the angler effort is directed at cold-water fisheries.

Thirty percent of the angling pressure is accommodated by warm-water rivers. Sixty five percent of all angling activity takes place on the warm-water lakes of the district.

The principal species harvested by residents are: walleye, northern pike, smallmouth and largemouth bass, brook trout, lake trout, splake and rainbow trout. Bullheads and suckers are harvested in early spring. Burbot, which are taken during the winter, are frequently discarded. A small, but highly valued muskellunge fishery exists in the Rideau River. No angler interest exists in sturgeon, and the local population of American eels is not utilized. The principal species harvested by non-residents (in decending order) are: yellow perch, pan fish, northern pike, smallmouth bass, largemouth bass and walleye. Actual angler catches do not necessarily reflect angler preferences.

Current and projected angling harvests, as well as the current and projected angling opportunities are presented in Table 2.3.1.
Although overall it is anticipated that projected sport fish yields will meet the demand (projected use) there will be imbalances among various fisheries.

Warm-water lake fisheries, however, which are already being harvested in excess of the allowable level, will be further stressed.

Cold-water fisheries are largely artificial, and few in number. The latent demand for cold-water fishing recreation is such that all present and future fisheries in the Carleton Place District will face chronic problems of over-utilization.

TABLE 2.3.1 CARLETON PLACE DISTRICT ANGLING FISHERY YIELDS AND USE 1985 - 2000

YEAR	1985 CURRENT USE		1985 POTENTIAL YIELD		2000 PROJECTED USE		2000 REFINED TARGET	
Fishery	Kg.	Angler Days	Kg.	Angler Days	Kg.	Angler Days	Kg.	Angler Days
Cold-water Lakes	7,600	10,700	7,750	12,200	8,500	12,500	8,500	12,500
Warm-water Lakes	89,515	135,400	91,400	107,311	100,700	152,300	100,700	152,300
Private Ponds	50	69	50	70	56	78	56	78
Cold-water Rivers & Streams	48	200	54	240	54	240	54	240
Warm-water Rivers & Streams	102,000	62,000	115,000	108,600	115,000	70,000	115,000	70,000
TOTALS	199,213	208,369	214,254	228,421	224,310	235,118	224,310	235,118

Walleye will suffer the greatest imbalance between production and harvest, followed by northern pike, lake trout, brook trout, rainbow trout and splake in descending order. Smallmouth bass, largemouth bass, whitefish, pan fish and coarse fish will continue to show surpluses.

Detailed estimates of yields, uses and projections, by species and water type are shown in Tables 20.2 through 20.6 in the Background Document and the Background Summary, 1987 Sections 2.3.0 to 2.4.3.

2.3.2 COMMERCIAL (FOOD) FISHERY YIELDS, USE & VALUE

Only one active commercial fishery exists in the district at present. This operation is located in the Ottawa River and harvests approximately 300kg of sturgeon, 300kg of carp and 1,000kg of bullheads and channel catfish combined. The annual value of existing commercial fish landings is

approximately $10,000.

The projected use for the commercial fishery is believed to be well within the potential yield of district waters.

2.3.3 BAIT-FISH YIELDS, USE & VALUE

Twenty two bait-fish harvesters and 31 bait-fish dealers are licenced in the Carleton Place District. The reported harvest from local waters was 40,000 dozen in 1984, 35,000 dozen in 1985 and 24,000 dozen in 1986. The apparent drop in yield is as yet unexplained. The average value of bait-fish is $2.0/dozen. The projected demand for bait-fish can readily be accommodated, unless acidification or other as yet undetermined factors significantly impair the habitat.

2.4 OTHER USES OF DISTRICT WATERS

A considerable amount of other (non-fisheries) information must be taken into consideration when formulating a fisheries management plan.

There are presently an estimated 200 man made dams on district streams, rivers and lakes. Dams alter fish habitat, restrict fish movements and partition various species in different portions of a stream. Dams change temperature regimes, flow patterns, cause siltation and drown rapids. Water levels in some streams and lakes may be manipulated for power generating facilities, for navigation purposes, for flood control, for municipal drinking water intakes or for other specific urban needs. If carefully manipulated some dams may be beneficial for some fisheries.

Land use practices, such as agricultural activities, municipal drains, deforestation, mineral extraction, urban development and lakeshore

developments may have a significant impact on local fisheries. Similarly any form of pollution, whether agricultural or industrial, can alter water quality or fish habitat thereby reducing potential fish yields.

It can be assumed that the intensification of farming practices, the demand for additional municipal drains, for seasonal residences, for lakeshore alterations will continue to rise with the gradual increase of the human population in the Carleton Place District.

Fishing accounts for 62% of the boating activity on key lakes in the District (Aerial Census 1981). Other boating activities include sailing, cruising, waterskiing and canoeing.

Swimming and snowmobiling are additional active uses of District lakes.

2.5 PROBLEMS AND ISSUES

Problems and issues have been detailed in the two background documents. Some area specific problems were identified during the public consultation process, such as access problems to the Ottawa River, ice fishing problems on Clayton Lake, water levels on the Rideau River, etc. Basically problems and issues can be summarized under five general categories which are subject to overlap (See Table 2.5).

Table 2.5 PROBLEM SUMMARY

Cold-water Fishery		Warm-water Fishery	
Lake	Stream	Lake	River
Problem: Shortage of Fish and Fishing Opportunities			
Over-utilization	over-utilization	--	--
Over-exploitation lake trout	--	over-exploitation walleye & pike	--
--	--	under-exploitation bass, pan fish, coarse fish	under-exploitation bass, pan fish, coarse fish
Lake trout recruitment	--	walleye recruitment	walleye recruitment
Access	Access	Access	Access
Problem: Loss of Environmental Quality			
Habitat loss	habitat loss	habitat loss	habitat loss
Water levels		water levels	water levels
Contaminants	--	contaminants	contaminants
Problem: User Group Conflicts			
--	--	bait fisheries	bait fisheries
--	--	potential commercial food fisheries	commercial food fisheries
Problem: Information Gaps			
Scientific and Management Information - applicable to all waters			
Problem: Public Awareness			
Public Awareness - applicable to all waters			

2.5.1 SHORTAGE OF FISH AND FISHING OPPORTUNITIES

Losses of individual fish stocks arise from a number of causes, including legal over-exploitation, illegal harvest, inappropriate hatchery stock, inappropriate introductions of alternate species, non-fishery oriented water regimes. Shortage of fishing opportunities are also caused by lack or loss of access and by lack of public interest in alternate species.

2.5.2 LOSS OF ENVIRONMENTAL QUALITY

The degradation of fisheries habitat has an obvious impact on the resident fishery and may ultimately result in the loss of fish stocks and fishing opportunities. In addition, the presence of contaminants may render fish flesh unsuitable for human consumption.

Habitat loss or degradation can arise from a number of causes.

Conflicting land and water uses often have profound effects on fisheries habitat. Excessive shoreline development has created problems, in terms of reducing habitat quality, in many rivers and lakes. Agricultural land use activities have resulted in deteriorated fisheries habitat in many streams and rivers such as the Castor, Jock, Carp, Rideau and Lower Mississippi Rivers. The abundance of dams, and the management of water for non-fishery objectives, such as electrical power generation, flood control, navigation and waste disposal have had a negative impact upon water flows, water quality, migration routes, siltation of substrate and on temperature regimes of fish habitat.

Other conflicting land and water uses which may have adverse impacts on both water quality and fisheries habitat include aggregate extraction, industrial activities, uncontrolled timber extraction and municipal development. Shoreline development e.g. filling and dredging, has resulted in the alteration or loss of a great deal of littoral zone and nursery habitat on many lakes and rivers, with particular impact on the Rideau River below the town of Kars.

Heavy metals, organochlorides and other contaminants affect district fish populations. Contaminant sampling is carried out regularly by MNR staff,

who forward the samples to the Ministry of the Environment for analysis. Information on contaminant levels in fish is published annually in the Guide to Eating Ontario Sport Fish. Levels of contamination generally increase with age and size of the fish, and are highest in climax predators.

A particular environmental problem is posed by acidic precipitation, which may impact negatively on the lower levels of the food chain, including plankton, invertebrates, amphibia, insects, as well as bait fishes.

2.5.3 USER GROUP CONFLICTS

Many conflicting uses of the district waters exist. Most of these generate habitat and fish population problems listed above. In addition a perceived allocation conflict exists between recreational fishermen and commercial food fishermen. A further possible conflict exists between the expectations of commercial bait fishermen versus the forage needs of the preferred angling species.

2.5.4 INFORMATION GAPS

Consistent cyclic assessments of waters is an extremely important, but expensive requirement. Complete assessment data are not always available for all waters. Future assessment surveys should be planned within a 20 year period, subject to funding.

2.5.5 PUBLIC AWARENESS

There is a need for effective and extensive public education programs. Generally, there appears to be a lack of understanding among the general public regarding the complexity of managing a fishery and its users. In many instances, unrealistic demands are placed upon the resource while in

other instances there has been a general lack of recognition regarding fisheries concerns in municipal planning. This is reflected in numerous public inquiries, as well as in media reaction to perceived concerns. Improved public stewardship and greater understanding of fisheries concerns is generated by public participation in fisheries management and habitat rehabilitation.

2.5.6 SUMMATION

In summary, if the projected demands on the fisheries resource are to be met and fisheries targets are to be achieved, the following problems must be addressed:

- Resident fish populations must be protected from over-exploitation, illegal activities and inappropriate stocking;

- Fisheries habitat must be protected from further deterioration. Degraded habitat must be enhanced to realize fish yields from under-producing waters. Shoreline developments and water related activities should be integrated in a manner that is compatible with the maintenance of healthy fish communities;

- Acid precipitation and toxic precipitation must be curtailed;

- Public participation in lakeshore and stream rehabilitation should be promoted;

- Artificial fisheries must continue to be maintained by hatchery stock;

- Commercial fishing should be used to re-balance fish populations;

. Conflicts among and within various resource user groups must be resolved and user groups should be encouraged to work cooperatively with resource managers;

. Understanding of fish productivity and allowable yields, fish community interactions and reliable harvest estimates must be improved;

. Public information and education regarding the principles and fundamentals of aquatic ecosystems and fish population dynamics must be expanded.

3.0 MANAGEMENT DIRECTION

3.1 GENERAL FISHERIES MANAGEMENT OBJECTIVES

The general goal of the Ministry of Natural Resources is to provide opportunities for outdoor recreation and commercial resource use for the optimum sustained social and economic benefits of the people of Ontario, consistent with the maintenance of healthy fish communities.

Development of the Carleton Place District fisheries management programs must be compatible with the overall goal, objectives and policy directives of the Ministry of Natural Resources.

These general principles were identified in the District Land Use Guidelines (1983) from which this Fisheries Management Plan takes direction. As nearly 93% of the District is private land, control over development is largely the responsibility of municipalities. The Ministry can influence appropriate actions with respect to fisheries management through its involvement in providing input to and review of development proposals. Additional support for fisheries management objectives can be provided by encouraging municipalities to recognize the importance of the fisheries resources in their official plan policies and zoning by-laws.

For the purpose of fisheries management in the Carleton Place District a number of objectives were identified. Each objective is associated with an individual target, which quantifies what is to be completed or achieved by a specific date. To meet the targets strategies were developed. Public consultation was very important in the selection of the strategies to identify the preferred choice of approach and give direction for management

initiatives. After the appropriate strategies were chosen individual tactics were selected to address each specific issue or problem. Precise tactic selection is essential for preparation of the annual budget and the annual work plan.

The seven general objectives are as follows:

Sports fisheries management:

. To meet the demand for sports fishes within the limits of a wisely managed and rehabilitated resource.

Bait fish management:

. To manage local bait fish stocks in order to sustain a viable industry consistent with stable fish populations.

Commercial (food) fish management:

. To maintain a viable industry by encouraging the harvest of commercial fish stocks where it is biologically sound and economically feasible and consistent with other legitimate uses of the fisheries resource.

Provincially rare and endangered species management:

. To ensure no native fish species becomes extinct.

Scientific and management information:

. To facilitate sound fisheries management through the collection and analysis of resource data and the development of effective techniques.

Public awareness:

. To promote greater public understanding of fisheries management

principles, thereby generating stronger social, economical and political will for the perpetuation of fisheries.

Fisheries enforcement:

. To assure greater compliance with habitat preservation and with resource protection laws.

TARGETS

During the formulation of the Carleton Place District Land Use Guidelines (1983) District targets for fisheries management were stated.

These fisheries targets have been revised as more resource information was collected and analysed. A significant change was the allocation of realistic quality values to the recreational pan fish and coarse fish components.

A shortfall in meeting some sports fisheries targets is expected. This shortfall will be mitigated by protecting, maintaining and managing cold-water and warm-water fisheries by resolving identified problems, by reclaiming or creating new cold-water or warm-water fisheries habitat, and by attempting to obtain access across private lands.

Bait fisheries and commercial food fisheries will be restructured to generate a feeling of stewardship among licencees, and to fully utilize natural surplusses.

The recreational fishing target of 600,000 opportunities for the year 2000, which was expressed in the District Land Use Guidelines, was reduced to 235,000 angling opportunities (Tables 2.3 and 2.3.1). Even these targets

exceed the presently allowable use. In order to meet the angling recreation objective extensive restructuring of the sports fishery is required.

Tactics chosen in this plan will rehabilitate the fisheries over the long term, result in increased harvests in the future, and provide for increased recreational use. A major thrust of management will be to replace pan fish productivity with game fish production.

Targets to the year 2000 are to meet the projected demand. Long-term objectives, beyond the year 2000 are to fully rehabilitate the fishery to the level of Potential Production (Table 20.1 Background document). Strategies and tactics are discussed by objective and target in the next section.

3.2 SPORTS FISHERIES MANAGEMENT

The potential for cold-water fish production is extremely limited in the Carleton Place District, due to a shortage of suitable waters. The expected demand of 8,500 kg will slightly exceed the potential yield. Environmental shortcomings such as damage to the littoral zone, are the most serious factor inhibiting recruitment. Heavy angling demand upon parent fish also reduces natural reproduction capacity. Thus the fishery is almost completely dependent upon stocked fish. The continued preservation of the cold-water fishery will therefore depend not only on our ability to supply viable strains of lake trout, brook trout, rainbow trout and splake but to maintain existing waters and to search out new waters to be managed for cold-water production.

The warm-water fisheries resource has the theoretical potential to produce approximately 215,000 kg of fish annually. This volume could sustain 330,000 angler opportunities. Unfortunately this fishery has been seriously degraded through historic overfishing as well as irreversible habitat damage. As a result the forecasted demand for the year 2000 exceeds the presently allowable take (Table 2.3.1). This problem is compounded by the fact that anglers show little inclination to shift their interest to pan fish and coarse fish.

A further complication arises from the fact that shortfalls as well as surpluses do not apply equally to all species or all waters (Fig. 3.2(a)&(b).

Warm-water fisheries management in the Carleton Place District will therefore have to be directed toward habitat protection, habitat rehabilitation, change of species composition, improvement of natural reproduction and regulatory harvest control.

Fig. 3.2(a)

ANGLING IN THE CARLETON PLACE DISTRICT

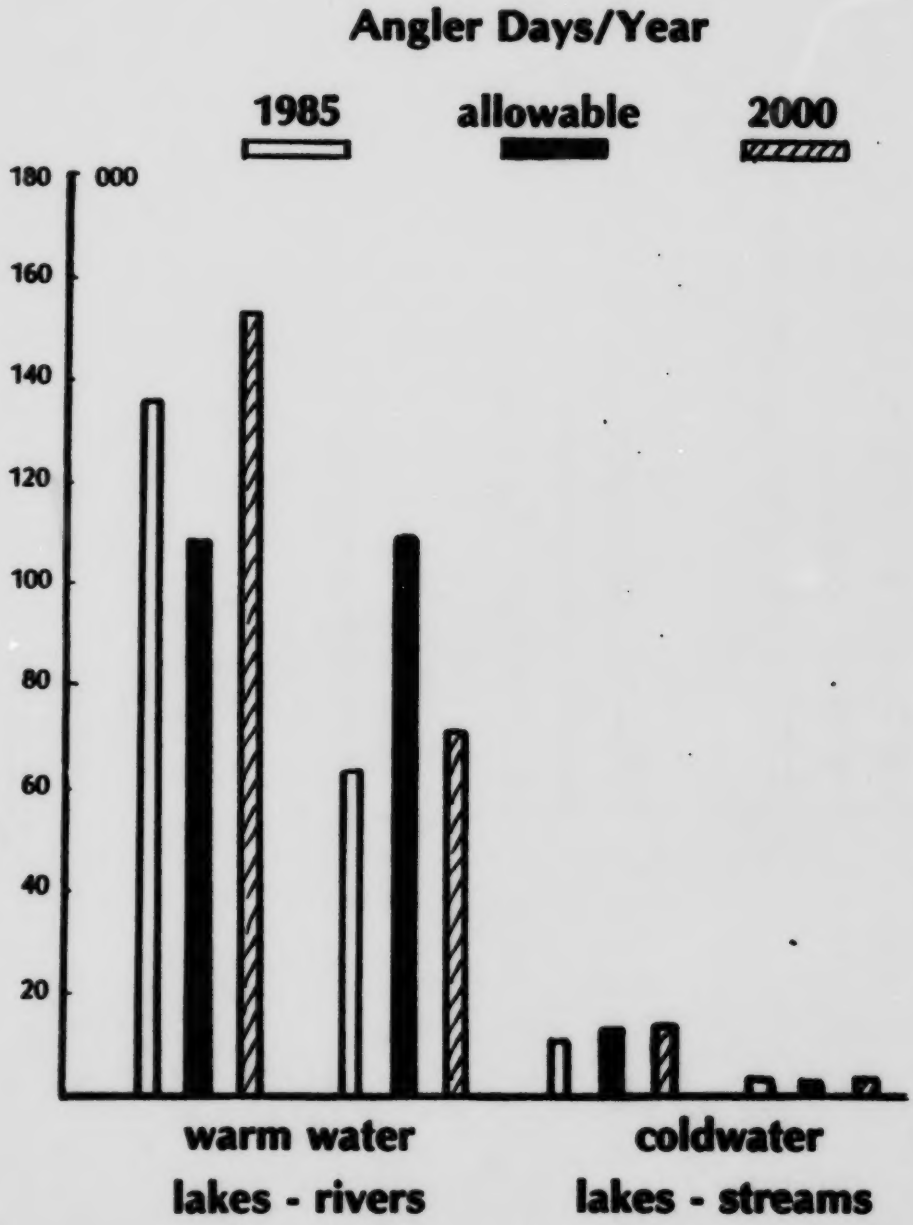
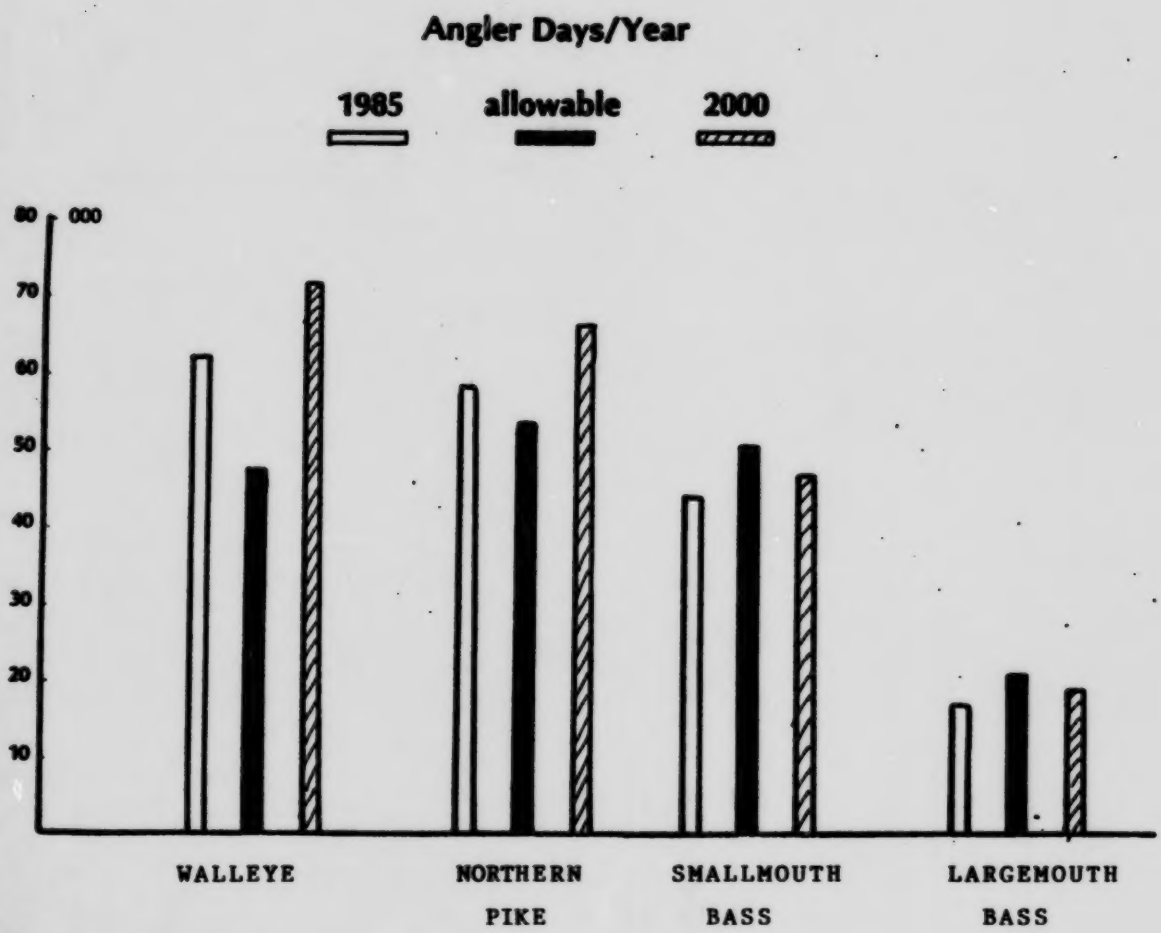


Fig. 3.2(b)

ANGLING IN THE CARLETON PLACE DISTRICT



STRATEGIES

Fisheries management strategies have been refined from those outlined in the District Land Use Guidelines and represent long term direction to the year 2000.

Public participation in the choice of strategies and tactics has been encouraged throughout the planning process. This ranged from verbal comments received at three public information meetings, to suggestions from real estate agents as well as from the press, during two special interest group meetings. A total of 2,700 questionnaires were distributed at two stages in the process and written responses were tabulated and utilized in the selection. In addition informal comments received by telephone or general public contact were noted.

The following strategies and related tactics have been selected for each fish community as the means for achieving the sport fish objectives and targets:

3.2.1 COLD-WATER FISHERIES

While the objective for the cold-water sport fishery is to meet the calculated demand within the time span of this plan, it must be realized that a latent, unfilled demand for a replenishable cold-water fishery currently exists, and will continue to exist within a radius of approximately 50 kilometres of urban Ottawa.

The target for the year 2000 for the cold-water sports fishery was calculated as 8,554 kilograms and 12,740 angler days.

Strategies and tactics to achieve these targets and objectives are outlined

below:

(I) Increase cold-water fishing opportunities by:

- maintaining present level of access to designated trophy and wilderness lakes i.e. Class 1 waterbodies
- attempting to obtain public access to potential cold water fisheries surrounded by private lands
- attempting to establish one public fishing area near the city of Ottawa in joint cooperation with a sponsor organization
- stocking hatchery brook trout, splake and lake trout into lakes lacking natural reproduction
- increasing stream stocking rate for brook trout and rainbow trout, where habitat quality warrants
- introducing brown trout into suitable waters
- introducing brook trout into new waters where feasible.

(II) Control exploitation rates on cold-water fisheries where overharvesting occurs by:

- eliminating winter fishing on designated lake trout lakes such as Silver Lake and Big Rideau Lake

- reducing lake trout creel limit from 3 to 2 in Silver and Big Rideau Lakes

- prohibiting the use of herring for bait

- actively enforcing creel limits and seasons.

(iii) Protect and enhance cold-water fish habitat by:

- initiating shoreline timber management procedures on "areas of concern" located on Crown lands and Agreement Forests as outlined in the Carleton Place District Timber Management Plan (App. 12)

- encouraging logging operators on private land to follow Crown land logging standards near lakes and streams (App. 12)

- controlling shoreline and littoral zone alterations through enforcement of relevant statutes

- rehabilitating degraded spawning beds where required

- encouraging cottage associations to commence voluntary shoreline rehabilitation projects

- encouraging fish and game clubs to "adopt-a-stream" and carry out annual habitat enhancement work

- identifying and preserving existing forest cover, wetlands, aquifers and spring recharge sites in headwater areas

- identifying sensitive areas through stream inventory and habitat assessment programs

- liaising with municipalities and other government agencies to ensure sensitive habitat receives recognition

- monitoring water quality, pertaining to fish habitat, on a regular basis

- reclaiming cold-water lakes by use of piscicides, where an invasion of non-compatible species has occurred, subject to class environmental assessment.

(iv) implement water level management favourable to cold-water fish production by:

- requesting Parks Canada to stabilize winter levels from October 10 to March 15 in Big Rideau Lake

- encouraging the City of Ottawa to develop an alternative to the mid-winter water flush from the Rideau system.

3.2.2 WARM-WATER SPORT FISHERIES

The warm-water sport fishery objective is to meet the calculated demand for warm-water fish angling within the time span of this plan.

The warm-water sport fishery target for the year 2000 was established as 215,700 kilograms and 222,300 angler days.

Strategies and tactics to achieve these targets are as follows:

(I) Provide warm-water fishing opportunities by:

- maintaining the primitive access to designated wilderness and trophy lakes
- attempting to obtain public access to warm-water fisheries surrounded by private lands
- introducing muskellunge into suitable waters.

(II) Reduce exploitation rates on walleye and northern pike communities while increasing recreational attractiveness and increasing angling opportunities by:

- implementing a slot size limit of 35cm to 50cm for walleye on an experimental basis in Pike, Christie, and White Lakes
- implementing a larger minimum size limit for walleye on an experimental basis on Bennett and Clayton lakes

- maintaining the minimum size limit of 35cm for walleye for all other District waters as a control to monitor fish population during the experimental assessment period

- implementing a slot size limit of 50cm to 65cm for northern pike on an experimental basis for Pike, Christie and White Lakes

- enforcing creel limits and seasons

- closing the open season for walleye and northern pike on March 15 in Division 9.

- encouraging "catch-and-release" sport fishing for walleye and pike

(iii) Shift angling pressure to under-utilized communities by:

- encouraging greater use of river fisheries

- developing access points, where needed.

(iv) Rebalance imbalanced fish communities by:

- encouraging more intensive harvests of pan fish through derbies to remove competitive species

- implementing restricted coarse fish and pan fish commercial fisheries, in waters where fish sizes are adequate for marketability - live gear only

- removing coarse fish under a CFIP program in walleye-pike-bass waters where volunteer groups exist.

(v) Improve or rehabilitate fish habitat by:

- improving degraded or inadequate streams, lakeshores and spawning areas

- supporting "self-help" habitat rehabilitation projects such as those undertaken by lake associations affiliated in the Mutual Association for the Preservation of Lake Environments (MAPLE)

- supporting habitat enhancement projects initiated by interest groups through providing guidance, expertise and funding under CFIP

- encouraging local clubs to "adopt a spawning bed"

- encouraging local trappers to remove nuisance beaver from strategic spawning streams.

(vi) Protect fish habitat by:

- restricting all further sales of remnant Crown owned shoreline reserves

- enforcing habitat related legislation under the Fisheries Act, Lakes & Rivers Improvement Act, Public Lands Act, Beach Protection Act, etc.

- establishing an annual shoreline inspection program on district

lakes to document shoreline alterations and advise landowners in shoreline protection and prosecute unauthorized alterations where necesssary

- integrating fisheries concerns into forest management planning (Appendix 12)

- encouraging municipalities to legislate appropriate setbacks for construction of dwellings, septic tanks, roads, boat houses, with variances according to slope, soil depth, soil type, etc.

- assisting lake associations to organize self-help action groups, to re-plant erosion resistant vegetation and carry out general volunteer habitat improvements (MAPLE)

- reviewing drain plans, municipal plans, severances, subdivision plans, in all areas fronting waters.

(vii) implement water level management favourable to warm-water fish production by:

- maintaining constant flow over walleye stream spawning sites between March 20th and May 10th at Dalhousie, Joe, Christie and Horne Lakes, the Ottawa River and other locations subject to water flow controls

- preventing backflooding of pike and muskellunge spawning areas under deep water, after spawn is deposited in shallows between March 20th and May 15th in White, Bennett, Kerr, Clayton, Pike, Horne, Park, Mississippi, Bobs and Stump Lakes, and portions of the Rideau River

- retaining early April water levels on controlled lakes, Bennett, Pike, Widow, Park, Kerr, Mississippi, White, Horne, Stump through April, May and early June to facilitate hatching of pike, walleye, perch, bass and sunfish

- scheduling gradual incremental drawdowns to a maximum of 75cm between June 20th and September 1st in White, Mississippi, Pike and Bobs Lakes

- stabilizing waters at mid September level on all controlled lakes for the fall and winter

- analyzing the impact upon fisheries by any planned new dam, and formulate amendments or objections.

(viii) Assure optimum recruitment of warm-water fish by:

- preventing over-exploitation of spawners

- providing and protecting spawning habitat

- liaising with appropriate agencies to adopt rule curves favourable to spawning fish.

3.3 BAIT FISH MANAGEMENT

The objective of the bait fishery is to sustain a viable industry consistent with stable bait fish populations.

The bait fish production target for the year 2000 is 50,000 dozen.

The bait fish resource in the Carleton Place District is adequate to sustain 15 fully licenced bait fish harvesters, who are harvesting bait fish from the wild, in 15 individual bait fish blocks, 10 are inland areas and 5 are Ottawa and Rideau River areas (see Table 20).

No ceiling is placed on the number of bait fish dealer licences without harvesting privileges, as long as the District operating standards are satisfied.

The following strategies and related tactics will be utilized to achieve the designated bait fish target:

(1) Protect and maintain existing bait fish populations, as forage species and as a commercial resource by:

- preventing over-exploitation of bait fish populations by limiting the number of harvesting licences where required
- monitoring bait fish harvest through annual returns to ensure local populations in heavily utilized areas are not over-exploited
- preventing the introduction of competitive fish species or the spread of disease by enforcing pertinent regulations

- insisting on compliance with the established bait fish holding and transporting standards.

(ii) Harvest wild natural surpluses by:

- encouraging greater use of the Ottawa River
- assigning large, exclusive harvesting blocks to existing harvesters, in order to promote husbandry practices of operators
- eliminating 5 harvest licences by attrition, where overlapping of harvest territories is occurring.

(iii) Promote bait fish culture by:

- encouraging use of municipal sewage lagoons as bait fish rearing ponds
- encouraging bait fish production in abandoned quarries, gravel pits or borrow pits
- encouraging the establishment of private bait fish culture stations.

(iv) Revise licencing procedure by:

- developing an improved system for harvesting licence allocations.

3.4 COMMERCIAL FISH MANAGEMENT

The commercial fish potential is considered to be that portion of the resource which is not required for the recreational fishery, the private use fishery and the bait fish fishery.

Considerable potential for intensification of the existing commercial fishery as well as licencing of additional commercial fisheries is present in the District.

The projected harvest for the year 2000 is 5,000 kg per year. This tonnage could be extended if greater public acceptance of commercial fishing as a management tool for sports fish production can be attained.

The objective of the Carleton Place District for commercial fish management is to maintain a viable industry, harvesting commercial fish stocks where it is biologically sound, economically feasible and consistent with other legitimate uses of the fishery resource.

Targets for the commercial fishery are 5,000 kg of fish per year.

The commercial fishing target will be achieved utilizing the following management strategies and tactics:

(i) Activate the existing operation on the Ottawa River by:

- setting a minimum production target by species for one year. If under-achieved, review licence, curtail fishing area or cancel the licence

- assigning individual maximum quotas to regulate annual harvest

- enforcing commercial fishing related acts and regulations to ensure proper and accurate reporting, and make certain that quotas are not exceeded.

(ii) Licence new commercial fisheries where feasible by:

- considering licencing additional operators on the Ottawa River

- establishing an experimental electro-fishery under permit for the harvest of American eel in the Ottawa River

- licencing periodic restricted commercial fisheries for coarse fish in inland lakes to re-balance the heavily exploited sports fishery

- licencing a hoop-net fishery to operate in Rideau River waters during April-May and September-October with a quota of: 1,000 kg of bullheads, 100 kg of perch, 100 kg of sunfish, unlimited carp.

(iii) Revise licencing procedure by:

- developing an improved system for commercial fishing licence allocations.

(iv) Protect sturgeon populations by:

- coordinating sturgeon harvests in the Ottawa River with the Province of Quebec

- reducing sturgeon harvests to protect remnant stocks

- investigating size/maturity parameters of adult sturgeon

- amend minimum mesh size and minimum size limit regulations to assure adult sturgeon spawn at least twice prior to harvest

- identify and protect sturgeon spawning habitat from alteration and water level fluctuations during the spawning period.

3.5 PROVINCIALLY RARE AND ENDANGERED FISH SPECIES MANAGEMENT

Rare and endangered fish species include those species which have been identified by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and those afforded protection under the Endangered Species Act.

The river redhorse, Moxostoma carinatum, is the only species, with the status of "rare", known to exist in the Carleton Place District.

The objective for the management of rare and endangered fish is to assure the survival of this species.

The following strategies and related tactics will be utilized to achieve this objective:

(1) Protect the habitat and maintain existing populations of rare and endangered fish species by:

- enforcing existing legislation pertaining to fish habitat protection (eg. Fisheries Act) where required

- initiating aquatic inventory surveys to document abundance and distribution of rare and endangered fish species

- preventing the harvest of rare and endangered fish species by actively enforcing existing (eg. Endangered Species Act) legislation

- establishing sanctuaries in appropriate locations and for critical times.

(ii) inform and educate the public regarding the status of locally rare and endangered fish species by:

- supporting the efforts of individuals or organizations (eg. Federation of Ontario Naturalists) to increase public awareness of rare and endangered fish species

- providing information on the current status of locally rare and endangered fish species to the general public.

3.6 SCIENTIFIC AND MANAGEMENT INFORMATION

Trend-through-time information is essential for the continued management of all major fisheries in the district. Other fisheries are managed on a type-lake basis.

The collection and analysis of resource data to facilitate fisheries management and to develop effective techniques is the objective for scientific and management information.

The following strategies and relevant tactics will be used to achieve this objective:

(I) Update lake and stream inventories by:

- obtaining limnological winter and summer profiles
- carrying out inventory gill netting in unsurveyed waters and in waters suspected of species composition change.

(II) Collect utilization and harvest data by:

- carrying out stratified summer creel census (CREESYS), 5 lakes/year in a 3 year return cycle
- undertaking stratified winter creel census (CREESYS) of 5 to 8 waters/year in a 6 year return cycle
- conducting trout stream creel census during May and half of June in a 6 year return cycle on 8 streams
- undertaking aerial boat counts, 36 stratified flights covering approximately 30 to 40 fisheries. Return cycle once every 6 years.

(iii) Evaluate fish stocking impacts by:

- carrying out periodic assessments by gill netting, trap netting, hoop netting, electro fishing, creel census.

(iv) Evaluate naturally reproducing populations by:

- carrying out population surveys in 5 year cycles.

(v) Carry out habitat assesment by:

- conducting annual lake and river shore assessments in cooperation with Lands Branch
- documenting shoreline alterations
- investigating and recording impacts of littoral zone destruction.

(vi) Evaluating success or failure of specific management actions by:

- carrying out "before and after" surveys when new management activities are introduced
- analysing survey results and documenting in report format
- formulating recommendations for future direction.

3.7 PUBLIC AWARENESS AND INFORMATION

Fisheries are a biological indicator of environmental health which is more sensitive than mechanical, physical or chemical measurements.

Lack of public understanding of fisheries management principles and information needs are one of the key factors affecting public concepts and demands.

Absence of knowledge is evident behind a majority of shoreline alteration proposals. An increase of public and municipal understanding could reduce the need for administrative or punitive action.

The objective for public awareness is to promote greater public understanding of fisheries management principles, capacities and limitations, and the values of fisheries as an environmental health barometer.

The following strategies and related tactics will be used to create a more informed public:

(1) Generate public understanding and support for fisheries issues by:

- attempting to keep public informed about the resource status through news releases

- compiling fisheries information hand-out material from creel census and survey data

- preparing public hand-out material regarding shoreline preservation
- presenting local media with habitat preservation related material
- arranging for media coverage on fisheries projects
- conducting open houses for general public information.

(ii) Promote public involvement by:

- motivating clubs to carry out small projects such as stream improvements, trout lake reclamation and spawning bed enhancement, through the Community Fisheries Involvement Program.

(iii) Promote public appreciation of costs, complexity and biological implications of fisheries management by:

- attending club meetings; lecturing at schools and workshops; organizing "Teach a Teacher" workshops
- holding one annual Lake Association Workshop and invite representatives of all known lake groups.

(iv) Promote Distict staff understanding of fisheries matters by:

- conducting one fisheries presentation to staff per year.

3.8 FISHERIES ENFORCEMENT

Illegal harvests during critical periods can be a major factor reducing fish populations.

Unauthorized habitat alterations affecting fish production are a serious concern. Illegal bait fishing operations and occasional illegal commercial fishing is known to occur.

The objective of pro-active and re-active fisheries enforcement is to assure greater compliance with habitat preservation and resource protection laws for the purpose of maintaining recreation and economic benefits, and the continuation of a multi-faceted fauna.

The following strategies and relevant tactics shall be used to achieve the fisheries enforcement objectives:

(1) Conducting field checks in sports fisheries, commercial fisheries and fish habitat enforcement regarding fishing gear, seasons, creel limits, quotas, habitat, etc. by:

- undertaking random boat patrols in key areas
- scheduling road check stations
- conducting special closed season patrols in bass waters, winter and spring
- scheduling special patrols in experimental management waters

- carrying out spawning run enforcement for walleye, pike and lake trout

- planning fish guard CFIP operations at key locations

- continuing normal enforcement procedures, based on field observations and information

- undertaking special habitat inspections; processing of violations.

(II) Conducting covert operations by:

- carrying out plain clothes duty as required.

4.0 IMPLEMENTATION

4.1 GENERAL BACKGROUND

This plan provides the direction for fisheries management activities within the Carleton Place District to the year 2000. Within that period all activities should be consistent with the strategies and tactics which have been selected to achieve the stated objectives and targets. A management designation of individual waters is shown in Appendices 1 - 6.

Generally, strategies in this plan will be implemented through:

(i) the preparation of five year implementation schedules

(ii) programs and projects approved and funded under the Ministry of Natural Resources work planning process

(iii) input to or participation in other programs carried out by the Ministry of Natural Resources, local Conservation Authorities or other agencies

(iv) cooperative efforts with local sportsmen's organizations and private interest groups under the Community Fisheries Involvement Program

(v) review and approval of work plans and proposals from municipalities, private landowners and other government agencies.

This section of the plan will establish the first five year (1987-91) implementation schedule. Annual work plans will be developed from the priorities established in this schedule. The annual work plan will address both the cost and timing for the implementation of tactics.

While this schedule may be updated annually, the implementation schedule for subsequent five year periods will be formally prepared in 1990 and 1995 respectively. These schedules will be subject to public notice and review and must be approved by the District Manager and Regional Director. Should any significant modifications or revisions to the implementation schedule

or fisheries management plan be required, the same public review and approval process shall be followed.

Projects to be undertaken during the next five year period have been identified according to those which can be completed under existing funding and those which would require additional funding. Many of the management activities initiated under current funding levels would be completed by permanent staff, supplemented by seasonal employees and perhaps assisted by local sportsmen club members.

It is evident that the fisheries management targets which are identified in this plan can not be met on the basis of the existing funding level.

Routine planning and administrative functions have not been included. Enforcement activities are not detailed for security reasons. Many strategies and tactics, such as enforcing existing legislation or encouraging public participation, have been identified in this plan and are carried out on an ongoing basis.

Numerous fisheries management projects have been completed in recent years by local sportsmen's organizations under the Community Fisheries Involvement Program. Since they rely on volunteer groups it is difficult to predict which projects will be initiated in the future. Potential CFIP projects have been identified and are listed in Appendix II. CFIP projects are listed as potential activities under the implementation schedules.

Where natural reproduction is impaired or inadequate, cold-water sport fisheries shall continue to be managed on the basis of hatchery support, with emphasis on splake and rainbow trout where water quality is inadequate for lake trout or brook trout.

Warm-water fisheries will be managed on the basis of natural reproduction. The ongoing experimental walleye stocking project will continue in the designated project lakes.

With additional funding, a number of aquatic habitat inventory programs (lake and stream surveys) would be undertaken. These include unsurveyed cold-water streams and a number of small, previously unsurveyed lakes and

ponds. In addition to monitoring done by the Ministry of the Environment, routine water quality analyses will continue to be carried out at regular 3 year intervals on all lakes included in harvest assessments.

Fish population assessments will be intensified. Lake use and fish harvest surveys will continue on a long-term basis of 5 year cycles.

Fish habitat assessment and habitat rehabilitation will be intensified through Ministry programs and public participation.

A means for improved public information dissemination will be developed.

The bait fish industry will be managed on an exclusive harvest block basis. Alternate, non-traditional production will be encouraged.

Management efforts will continue to be directed toward modernization of the commercial fishery. This includes developing new markets and techniques to utilize coarse or under-utilized fish species.

4.2 IMPLEMENTATION SCHEDULE, 1987-91

The first five year (1987-91) fisheries management implementation schedule is detailed in Appendix 8 & 9. Operations tentatively scheduled for later periods are listed to reflect the cyclical nature of ongoing assessment work, and must be confirmed in future plan revisions (Appendix 10). Fisheries projects are subject to the requirements of the Environmental Assessment Act. As a result of complying with class assessment requirements there may be a change to the specific factors identified in this plan.

Projects which relate to specific management tactics that are not identified in the first (1987-91) implementation schedule will be confirmed or identified and priorized in implementation schedules of subsequent plan revisions.

5.0 REFERENCES

This management plan only highlights the results of many studies and planning exercises. In fact, a number of background documents were utilized in the formulation of this fisheries management plan. These documents are available at the Carleton Place District office and include:

(I) Lanark District Fisheries Management Plan 1978 - 1988 (Mulholland, C.H., 1978). Operational direction for habitat and fish population management of waters in Lanark County. Unpublished District Document, O.M.N.R. Carleton Place District.

(II) Terms of Reference (von Rosen, H.K., 1986) Outline of the planning process with an approximate timetable for each phase. Unpublished document, O.M.N.R. Carleton Place District.

(III) Carleton Place District Fisheries Background Information (von Rosen, H.K., 1986) Provides a detailed synthesis of all background information including problems and issues, fisheries yields, current and projected resource use and current fisheries management practices. Unpublished document, O.M.N.R. Carleton Place District.

(Iv) Plan de Gestion des Peches du District de Carleton Place, Renseignements generaux et strategies de gestion facultatives, Resume, (M.N.R. 1987) Public document summarizing information. O.M.N.R. Carleton Place District.

(v) Summary of Background Information and Optional Management Strategies (M.N.R. 1987) - Public document summarizing background information, highlighting problems and issues and presenting optional fisheries management strategies. Published document, O.M.N.R. Carleton Place District. ISBN-0-7729-2183-0.

(vi) Summary of Background Information Open House (von Rosen, 1987) - summary and evaluation of the first public open house on problems/issues and optional management strategies, and results of public comment on the background information/optional management strategy phase of the planning process. Unpublished document, O.M.N.R. Carleton Place District.

(vii) Individual lake studies of the Carleton Place District covering a 28 year time span. Unpublished District reports by various authors, (1959-1987).

(viii) Bedl, N., and P. Clifford, 1980, Surveys of Ontario's Resident and Non Resident Sport Fishermen, O.M.N.R., Fisheries Branch, Toronto, 149 p. + appendices.

(ix) Cox, E.T. and W.J. Straight, 1970. Ontario Angling: Facts and Figures, O.M.N.R., Fisheries Branch, Toronto, 96 p.

(x) Ministry of Natural Resources, 1986c. A Framework for Resource Management Planning in M.N.R., planning guidelines prepared by Policy and Planning Secretariat, Queen's Park, Toronto.

(xi) District Fisheries Management Plans Planning Manual, 1986. Public document, O.M.N.R., Queen's Park, Toronto.

(xii) Background Information, Lanark District Land Use Strategy, 1980. Public document, O.M.N.R., Carleton Place District.

(xiii) Carleton Place District Land Use Guidelines, 1983. Public document, O.M.N.R. Carleton Place District.

(xiv) Southern Ontario Coordinated Program Strategy, 1982. Public document, O.M.N.R. Whitney Block, Queen's Park, Toronto.

(xv) Carleton Place District Draft Fisheries Management Plan, 1986 - 2000. Public document provides draft outline of district fisheries management plan 1988 - 2000. O.M.N.R. Carleton Place District. ISBN #0-7729-3179-8.

(xvi) Summary of public responses to the Carleton Place Draft Fisheries Plan. Unpublished document, O.M.N.R., Carleton Place District.

6.0 GLOSSARY

ANGLING OPPORTUNITY

. A measure of supply to indicate the amount of use which a resource can sustain. An angling opportunity may be defined as one fishing trip not exceeding one day and usually averaging four hours in length.

ANGLING QUALITY STANDARD

. The minimum number of fish which could be expected to be caught by an angler during an average fishing trip to guarantee a satisfactory recreational experience. This standard may be expressed in fish per hour or kilograms per angler day.

ARTIFICIAL FISHERY

. A fishery which is maintained entirely through plantings of hatchery reared fish in order to provide angling opportunities.

BAIT-FISH

. Any member of the minnow family Cyprinidae, except carp and goldfish; the mudminnow family Umbridae; the stickleback family Gasterosteidae; the trout-perch family Percopsidae; the sculpin family Cottidae; the genus Leucichthys of the whitefish family Coregonidae and the darter sub family Etheostomatinae.

COARSE FISH

. Fish species which are not normally sought by recreational anglers. This commonly includes fish from the families Catostomidae (suckers), Ictaluridae (catfish), Gadidae (cods) and Sciaenidae (drums).

COLD-WATER FISH COMMUNITY

. Fish populations comprised primarily of the families Salmonidae (trout, salmon and whitefish), Gadidae (burbot) and Clupeidae (herrings).

COMMERCIAL FISH

. Commercial fish refers to those species captured, under authority of a licence, and marketed for human consumption. The most common commercial fish species in the Ottawa River include carp, bullheads, channel catfish

American eels, white sucker and yellow perch.

CREEL SURVEY

. A technique for enumerating and interviewing anglers to obtain information concerning fishing pressure, angler success, fish harvests and biological characteristics of angled fish.

CURRENT FISHERIES YIELD

. The current fisheries yield expresses the yield under existing circumstances given that, due to the presence of some underproducing waters, the total potential fisheries yield is currently not being realized.

EXOTIC FISH SPECIES

. A fish species which is neither native nor has become naturalized or self sustaining in waters within the Province of Ontario.

FISH COMMUNITY

. A combination of different fish species living and interacting together in the same body of waters.

NATURALIZED FISH SPECIES

. A fish species which was not indigenous to a particular waterbody but was introduced and has become established through natural reproduction.

NON-RESIDENT

. An angler whose principal residence is outside the province of Ontario.

OBJECTIVE

. A quantifiable and attainable end which is to be achieved.

PACIFIC SALMON

. Pacific salmon includes coho salmon, chinook salmon, kokanee salmon, pink salmon and any member of the genus Orchorhynchus.

PAN FISH

. A group of secondary predator fishes comprised of species such as yellow perch, bluegill, pumpkinseed, rockbass and black crappie.

POTENTIAL YIELD

. The theoretical maximum yield that can be taken annually without exhausting the compensatory reserve of a fish community. The term is analogous to maximum sustainable yield, maximum equilibrium yield theoretical yield and allowable yield.

PROJECTED YIELD

. The projected yield represents the estimated fisheries yield at the year 2000 and is based upon changes in fish stocks as well as realizing a proportion of the potential yield from waters currently rated as under-producing.

PULSE FISHING

. A harvest technique for commercial food fisheries and bait fisheries whereby a waterbody is exploited in only one of several years on a regular basis.

REMEDIAL ACTION PLAN

. A multiagency plan aimed at the identification, definition and mitigation of a large scale environmental problem.

RESIDENT

. An angler whose principle residence is in Ontario. A local resident angler would be one who can fish an area on a day-use basis, i.e. travel to the area, fish and return home on the same day.

RULE CURVE

. A schedule of proposed water levels, usually covering a 12 month period, in a waterbody whose water levels are controlled by a dam.

SLOT SIZE LIMIT

. A size limit which permits an angler to keep fish above a maximum size and below a minimum size, but requires the live release of all fish within the slot definition.

SOUTHERN ONTARIO

. The southern Ontario planning region includes the following districts: Algonquin Park, Aylmer, Brockville, Cambridge, Carleton Place, Chatham,

Cornwall, Huronia, Lindsay, Maple, Napanee, Niagara, Owen Sound, Parry Sound, Pembroke, Simcoe, Tweed and Wingham.

SPORT FISH

. Top predator fish species which are sought and may legally be taken by angling. In eastern Ontario this usually includes fish from the families Salmonidae (trout and salmon), Percidae (walleye and perch), Esocidae (pike and muskellunge) and Centrarchidae (basses).

STOCK

. A species group or population of fish which maintains and sustains itself over time and may be identified by distinct genotypic characteristics.

STRATEGY

. Planned actions or measures designed to achieve a desired end.

TACTIC

. A specific method designed to achieve one or more strategies.

TARGET

. A quantified end to be achieved or completed by a specific date.

UNDER-PRODUCING WATERS

. Lakes and/or streams which, for some reason, have been withdrawn from fish production or are not producing at their estimated biological potential.

WARM-WATER FISH COMMUNITY

. Fish populations comprised primarily of the family Centrarchidae (basses), Esocidae (pike and muskellunge) and Percidae (walleye and yellow perch).

VIEWING OPPORTUNITY

. A measure of non-consumptive recreation supply utilized to describe the number of times a resource or facility can be used in a given time period. A viewing opportunity is considered not to be greater than one day.

App. 1.1 FISHERIES MANAGEMENT DESIGNATION

CLASS 1 - Cold-water Fisheries

Lake Name	Area (ha)	Township	Species	Comments
Bottle	10.94	Lavant	BT O	Manage as artificial brook trout fishery, by stocking
Dunks	3.78	Darling	BT O	Manage as artificial brook trout fishery, by stocking
Green	5.27	Lavant	BT O	Reclaim and manage as artificial brook trout fishery by stocking
Kates	5.70	Darling	BT W O	Re-inventory. Formulate management strategy.
Little Green	2.60	Darling	BT O	Reclaim and manage as artificial brook trout fishery
Minnow	2.07	Darling	BT O	Reclaim and manage as artificial brook trout fishery
Napier	3.81	Darling	LT BT O	Obtain access, if possible. Then manage for brook trout
Paddy	4.00	Dalhousie	RBT BT O	Rebuild dam, reclaim by poisoning, manage for brook trout
Perch	23.10	Lavant	RBT P O	Manage as a wilderness splake fishery
Round	49.41	N.Burgess	SPL NP SMB P O	Manage as a splake fishery
10 Lakes	110.68ha			

App. 1.2 FISHERIES MANAGEMENT DESIGNATION

CLASS 2 - Cold-water Fisheries

Lake Name	Area (ha)	Township	Species	Comments
Big Rideau (Lanark Cty portion only)	1275.0	N.Burgess	LT NP SMB W P LW	Fishery managed by the Brockville District as a lake trout/bass fishery
Brook	32.4	Darling	NP SMB P SPL	Manage for splake on put-grow-take basis Manage pike and bass on natural recruitment
Crain's	5.1	North Sherbrooke	BT O	Re-survey. Establish designation
Davern	51.8	South Sherbrooke	SMB P LMB SPL O	Attempt to obtain access, splake potential
Farren	172.9	South Sherbrooke	RBT NP SMB P LMB	Manage as a put-grow-take splake fishery Manage bass and pike on natural recruitment
Murray	19.9	Darling	BT SPL LT P	Attempt to obtain access, splake and rainbow trout potential
Peterwhite	11.3	Darling	BT O	Manage for brook trout on put-grow-take basis
Trombley	8.9	North Sherbrooke	BT O	Re-survey.
8 Lakes	1577.3 ha			

App. 1.3 **FISHERIES MANAGEMENT DESIGNATION**

CLASS 3 - Cold-water Lakes

Lake Name	Area (ha)	Township	Species	Comments
Lake of the Hills	3.1	South Sherbrooke	NP BT O	Re-survey, develop management designation
Little Clear	1.0	Darling	BT O	Re-survey and develop management designation
Silver (incl. Frontenac Cty. portion)	246.0	South Sherbrooke	LT NP SMB LMB P	Manage for lake trout as put-grow-take fishery Manage warm-water fish based on natural recruitment
3 Lakes	250.1 ha			

App. 2.1

FISHERIES MANAGEMENT DESIGNATION

CLASS 1 - Warm-water Lakes

Lake Name	(ha)	Township	Species	Comments
Bartraw	18.9	Lavant/ Blythfield	NP SMB P O	Manage for smallmouth bass & pike Check for walleye potential Carryout fish population assessment
Caldwell	17.42	Lavant	NP Spl O	Require survey update
Clay	3.9	Darling	NP O	Update inventory survey
Darling Long	77.36	Darling	RBT SMB P O	Attempt to improve water quality through a CFIP project. If successful manage for rainbow trout or introduce muskellunge
Lavant Long	80.19	Lavant	NP	Manage as a pike, walleye fishery
5 Lakes	197.77			

App. 2.2

FISHERIES MANAGEMENT DESIGNATION

CLASS 2 - Warm-water Lakes

Lake Name	Area (ha)	Township	Species	Comments
Barbers	40.10	Dalhousie	NP P O	Manage as a pike fishery
Baxter	12.30	Lanark	NP P O	Update inventory
Bennett	513.54	Bathurst	W NP SMB P LMB	Manage as a walleye fishery based on natural recruitment Improve Doran's Rapids spawning bed throuth CFIP Promote shoreline rehabilitation by cottagers through CFIP Manage as a unit with Fagan Lake Implement experimental 42cm minimum size limits for walleye
Bingley	4.60	Lavant	NP	Privately stocked with rainbow trout
Black	342.63	North Burgess	W NP SMB P LMB	Manage as walleye fishery based on natural recruitment Promote shoreline rehabilitation through CFIP Maintain 35cm minimum size limit for walleye as a control lake
Bow	20.10	Darling	W NP P O	Manage for pike
Bower	19.84	Dalhousie	W NP SMB P O	Manage for walleye-pike-bass based on natural recruitment in conjunction with Park Lake Improve walleye spawning beds
Boyd	12.70	Dalhousie	NP O	Update inventory
Christie	646.38	Bathurst South Sherbrooke	W NP SMB P LMB	Manage as a walleye fishery on the basis of natural recruitment Promote shoreline rehabilitation through CFIP Implement experimental slot size limits for walleye and pike

App. 2.2 FISHERIES MANAGEMENT DESIGNATION

CLASS 2 - Warm-water Lakes

Lake Name	Area (ha)	Township	Species	Comments
Clayton	452.39	Lanark Ramsay	W SMB NP LMB P	Manage as a unit with Taylor Lake as a bass-walleye-pike fishery Implement experimental 42cm size limits for walleye
Clyde	101.25	Lavant	NP P LMB O	Investigate walleye potential Manage as a bass-pike fishery
Dalhousie	603.45	Dalhousie	W NP SMB LMB P	Manage as a walleye fishery Promote shoreline rehabilitation through CFIP Maintain 35cm minimum size limit for walleye as a control lake
Fagan	67.23	South Sherbrooke Bathurst	W NP SMB LMB P	Manage in conjunction with Bennett Lake
Flower	97.20	Lavant	NP SMB LMB P O	Attempt walleye introduction through stocking Continue to manage experimentally for walleye If not successful manage for smallmouth bass
Gillies	23.10	Lanark	NP W SMB P O	Manage for northern pike Attempt largemouth bass introduction
Graham	19.80	Lavant	W NP O	Manage for walleye and pike Intensify enforcement
Horne	36.80	Lanark	NP P SMB O	No ready public access Continue to manage for pike and bass

App. 2.2 FISHERIES MANAGEMENT DESIGNATION

CLASS 2 - Warm-water Lakes

Lake Name	Area (ha)	Township	Species	Comments
Horn	32.81	Dalhousie	W NP SMB P O	Manage as walleye/bass fishery
Joe	59.94	Lavant	W NP SMB LMB P O	Included in walleye stocking study Manage for walleye and pike Assure suitable spring water regime
Kerr	54.27	Lanark	W NP P SMB LMB O	Manage as walleye-pike-bass fishery
LaFrance	45.40	Lavant	W NP SMB O	Manage as bass-pike-walleye fishery on basis of natural recruitment
Lavant (Spectacle)	37.90	Lavant	W NP SMB O	Manage predominantly for pike
Long	85.10	N.Burgess	NP SMB LMB P O	Manage pedominantly for pike Included in Rideau Lakes Fisheries Assessment Unit
Loon	19.00	N.Burgess	NP W SMB P LMB	Located within Murphys Point Provincial Park Manage primarily for pike

App. 2.2

FISHERIES MANAGEMENT DESIGNATION

CLASS 2 - Warm-water Lakes

Lake Name	Area (ha)	Township	Species	Comments
Lower Rideau (Lanark Cty. portion only)	875.00	N.Elmsley	LMB	Commercial hoop-net fishery licenced by Brockville District
			SMB	
			NP	Sports fishery managed for bass and pike by Brockville District
			W	
			P	Promote rehabilitation of Port Elmsley Spawning Bed
Maberly (Little Mud & Clear)	32.10	South Sherbrooke	NP	Manage primarily for northern pike
			W	
			SMB	
			P	
			O	
MacKay	19.80	Lanark	NP	Update inventory
			P	
			O	
Madden	16.70	Darling	NP	Update inventory
			O	
Nelson	16.90	Lavant	NP	Update inventory
			O	
Nicholson	4.00	Lavant	NP	Manage for northern pike
			P	
			O	
O'Connors (Connors)	7.40	Lavant	NP	Update inventory
			O	
Paddy Marsh	10.20	Dalhousie (L25 CVII)	NP	Update inventory
			O	
Park	55.89	Dalhousie	W	Included in walleye stocking study
			NP	Re-build dam, re-build spawning bed
			SMB	Manage for walleye-pike-bass in conjunction with Bower and Woods Lakes
			P	
			O	
Pigeon	16.20	Lavant	NP	Update inventory
			O	

App. 2.2

FISHERIES MANAGEMENT DESIGNATION

CLASS 2 - Warm-water Lakes

Lake Name	Area (ha)	Township	Species	Comments
Pike	295.97	N.Burgess	W NP SMB P LMB	Manage as a walleye fishery on the basis of natural recruitment Implement experimental slot size limits for walleye and pike
Poverty Pond	4.1	Lavant	NP O	Update inventory
Raycroft	26.30	Darling	NP P O	Update inventory
Riven	28.35	Lanark	W NP O	Manage as a walleye fishery Check upstream spawning bed
Robertson	63.99	Lavant	W NP SMB P O	Control lake in walleye stocking study Manage for walleye-pike-bass on the basis of natural reproduction
Samuel	15.20	Lanark	NP P O	Update inventory
Stump (Lower High Falls)	127.17	North Sherbrooke	LMB SMB W NP P	Manage as largemouth bass fishery in conjunction with Upper High Falls
Tate	7.00	Dalhousie	NP O	Update inventory Check brook trout suitability
Taylor	290.79	Lanark	W	Manage in conjunction with Clayton Lake
Upper High Falls	68.85	North Sherbrooke	LMB SMB W NP P	Manage with Stump Lake

App. 2.2 FISHERIES MANAGEMENT DESIGNATION

CLASS 2 - Warm-water Lakes

Lake Name	Area (ha)	Township	Species	Comments
White (Lanark & Renfrew Ctys)	2249.50	Darling Pakenham Bagot McNab	W NP SMB LMB P	Manage as a walleye-pike-bass fishery on the basis of natural recruitment Maintain water levels suitable for optimum fish production Implement experimental slot size limits for walleye and pike
Widow	26.73	Lavant	W NP SMB P O	Manage as a pike fishery
Wood	15.00	Dalhousie	W NP SMB P O	Manage in conjunction with Park Lake
47 Lakes	7621.97 ha			

App. 2.3 FISHERIES MANAGEMENT DESIGNATION

CLASS 3 - Warm-water Lakes

Lake Name	Area (ha)	Township	Species	Comments
Adam	72.5	N.Burgess	SMB LMB NP P O	Manage as a bass fishery
Aitkman	3.2	Lanark	NP O	Update inventory
Andrew	12.5	N.Burgess	NP O	Update inventory
Bobs (Lanark Cty portion)	228.1	South Sherbrooke	W NP SMB P LW LMB	Managed by the Napanee District as a walleye fishery
Constance	132.0	March	NP SMB W P O	Manage as a pike fishery on the basis of natural reproduction
Doctor	6.0	N.Elmsley	NP P O	Update inventory; manage as a pike fishery
Gallagher	6.1	Lavant	NP O	Update inventory
Hogg Bay	27.7	N.Burgess	SMB NP W P LMB	Manage in conjunction with Big Rideau Lake Improve walleye spawning bed
Lake in the Hills	5.5	Dalhousie	NP O	Update inventory
Little Silver (Silvery)	83.4	South Sherbrooke	SMB P LMB O	Manage for smallmouth bass Require population assessment

App. 2.3

FISHERIES MANAGEMENT DESIGNATION

CLASS 3 - Warm-water Lakes

Lake Name	Area (ha)	Township	Species	Comments
Lowney	44.4	Darling	NP P LMB O	Update inventory Manage for northern pike
Mann	14.1	Lavant	NP O	Update inventory
McGowan's	39.7	South Sherbrook	NP SMB P LMB O	Update inventory Obtain angling pressure data
McLaren	10.7	N.Burgess	NP SMB P LMB O	Update inventory
Mississippi	2349.0	Drummond Ramsay Beckwith	W NP SMB P LMB	Manage primarily for walleye on the basis of natural recruitment Encourage shoreline rehabilitation through CFIP Maintain 35cm minimum size limit for walleye as a control lake
O'Brien	46.2	South Sherbrook	SMB LMB NP P O	Manage for smallmouth bass
Otty	625.7	N.Burgess N.Elmsley	NP SMB P LMB O	Attempt to re-vitalize smallmouth bass fishery Encourage Cottage Association to maintain natural water outflow Re-assess in 5 year intervals
Patterson	149.0	Dalhousie	NP W SMB P O	Require population assessment Manage as walleye, pike, bass fishery

App. 2.3

FISHERIES MANAGEMENT DESIGNATION

CLASS 3 - Warm-water Lakes

Lake Name	Area (ha)	Township	Species	Comments
#30 (Mud)	9.3	South Sherbrook L13&14 CV	P O	Winterkills. Unsuitable for fisheries management
Roberts	8.3	Darling	NP P O	Update Inventory
Rock (SA)	9.4	N.Burgess	NP P LMB O	Update Inventory
Tulley's Pond	17.4	N.Burgess	LMB P O	Update Inventory
Willis	3.2	Darling	O	Update Inventory
#19	3.6	Dalhousie L14,CXII	SMB W P O	Update Inventory
#24	3.4	Darling L24,CIII	O	Update Inventory
#34	3.9	South Sherbrook L10&11 C II&III	SMB P O	Update Inventory
#64 (Dam) (Brownings Pond)	17.1	Lavant L1,CVI&VI	NP O	Update Inventory
#67	1.9	Lavant L6,CXII	NP O	Update Inventory
28 Lakes		3933.3 ha		

App. 3.0

FISHERIES MANAGEMENT DESIGNATION

Unsurveyed Cold-water Lakes

Lake Name	Area (ha)	Township	Species	Comments
Schuyler	4.9	Darling	BT	Inventory Establish future management direction
1 Lake	4.9 ha			

App. 4.1

FISHERIES MANAGEMENT DESIGNATION

Unsurveyed Cold-water Ponds

Lake Name	Area (ha)	Township	Species	Comments
Dobbie	8.9	Lavant	?	Inventory & establish future management
Anderson	7.3	Dalhousie	?	Inventory & establish future management
Chenny	2.4	Lavant	NP O	Inventory & establish future management
Craig	8.9	Lanark	?	Inventory & establish future management
Coyle	4.1	Pakenham	NP	Inventory & establish future management
Croft	3.2	Lavant	?	Inventory & establish future management
Little Joe	8.5	Lavant	NP B	Inventory & establish future management
Mills	10.2	N.Burgess	?	Inventory & establish future management
Nichol	6.2	Darling	?	Inventory & establish future management
Quig	20.3	Lanark	?	Inventory & establish future management
Reid	8.5	Lanark	LMB	Inventory & establish future management
Willyhart	3.2	Lavant	NP O	Inventory & establish future management
#58 (Clear)	7.9	Lavant	NP	Inventory & establish future management
13 Lakes		99.6 ha		

App. 4.2

FISHERIES MANAGEMENT DESIGNATION

Unsurveyed Warm-water Ponds

Lake Name	Area (ha)	Township	Species	Comments
Bear Lake	5.8	Dalhousie L27,CX	NP O	Inventory & establish future management
Billa Lake (Gunns Lk)	4.6	Darling L17,CVIII	BF	Inventory & establish future management
#5 (Blind Lk)	1.7	Dalhousie L14,CVII	?	Inventory & establish future management
Bowley Lk	2.0	Ramsay L14,CIV	?	Inventory & establish future management
Cranberry Creek Lake	0.6	N.Sherbrooke L25,CI	?	Inventory & establish future management
#24 (Deer Lake)	13.0	S.Sherbrooke L6,CVI	?	Inventory & establish future management
Gemmills Ponds	6.0	Lanark L5,CVI	?	Inventory & establish future management
Haley	14.8	Drummond	?	Inventory & establish future management
Hardy Lake	18.2	Lanark L8,CVII	?	Inventory & establish future management
Harts Lake	11.0	Lavant L7,CI	?	Inventory & establish future management
McIlraith Lk	2.4	Darling L5,CIII	?	Inventory & establish future management
McIntosh Lk	3.1	Lavant L18,CVIII	?	Inventory & establish future management
Mosquito Lk	8.0	Dalhousie L24,CXI	?	Inventory & establish future management
#23 Mud Lk	4.3	S.Sherbrooke L11,CIX	?	Inventory & establish future management
Mud Pond	20.7	March	?	Inventory & establish future management

App. 4.2

FISHERIES MANAGEMENT DESIGNATION

Unsurveyed Warm-water Ponds

Lake Name	Area (ha)	Township	Species	Comments
Pilon's Lk	10.0	Darling L13&14,CI	?	Inventory & establish future management
Otter	6.0	Dalhousie L25,CXI	?	Inventory & establish future management
Skunk	1.6	Darling L9,CXI	?	Inventory & establish future management
Taylor's Pd	2.2	Lavant L18,CII	?	Inventory & establish future management
Tower Lk	2.0	Lavant L21,CI	?	Inventory & establish future management
Upper Mud	9.3	Bathurst	NP	Inventory & establish future management
#28	0.3	S.Sherbrook L17,CV	?	Inventory & establish future management
#29	3.5	S.Sherbrook L17,CV	?	Inventory & establish future management
#13	3.4	Dalhousie L24,CXI	?	Inventory & establish future management
#15	1.5	Dalhousie L18,CX	?	Inventory & establish future management
#16	2.7	Dalhousie L16,CX	?	Inventory & establish future management
#17	0.3	Dalhousie L16,CVIII	?	Inventory & establish future management
#18	3.7	Dalhousie L16,CVIII	?	Inventory & establish future management
#21	1.4	Dalhousie L2,CVIII	?	Inventory & establish future management
#35	2.6	S.Sherbrook L11,CII	?	Inventory & establish future management

App. 4.2

FISHERIES MANAGEMENT DESIGNATION

Unsurveyed Warm-water Ponds

Lake Name	Area (ha)	Township	Species	Comments
#40	5.0	Darling L9&10,CIV	?	Inventory & establish future management
#27	6.0	Darling L12,CV	?	Inventory & establish future management
#2	9.0	Darling L24,CVI	?	Inventory & establish future management
#21	2.7	Lavant L26,CI	?	Inventory & establish future management
#22	4.8	Lavant L25,CI	?	Inventory & establish future management
#30	1.4	Lavant L24,CII	?	Inventory & establish future management
#34	1.4	Lavant L21,CI	?	Inventory & establish future management
#43	0.9	Lavant L15,CI	?	Inventory & establish future management
#45	1.5	Lavant L12,CI	?	Inventory & establish future management
#49	16.9	Lavant L7,CI	?	Inventory & establish future management
#51	6.1	Lavant L6,CII	?	Inventory & establish future management
#52	0.7	Lavant L10,CIV	?	Inventory & establish future management
#53	4.1	Lavant L7,CIII	?	Inventory & establish future management
#54	6.6	Lavant L3,CII	?	Inventory & establish future management

App. 4.2

FISHERIES MANAGEMENT DESIGNATION

Unsurveyed Warm-water Ponds

Lake Name	Area (ha)	Township	Species	Comments
#55	1.0	Lavant L6,CIII	?	Inventory & establish future management
#56	4.9	Lavant L8,CV	?	Inventory & establish future management
#59	4.4	Lavant L1,CIX	?	Inventory & establish future management
#60	1.5	Lavant L8,CVI	?	Inventory & establish future management
#62	0.7	Lavant L8,CVIII	?	Inventory & establish future management
#63	2.4	Lavant L6,CIX	?	Inventory & establish future management
#65	1.7	Lavant L4,CXI	?	Inventory & establish future management
#66	5.6	Lavant L4,CXI	?	Inventory & establish future management
#68	10.5	Lavant L1,CX	?	Inventory & establish future management
#22	3.4	S.Sherbrooke L11,CIX	?	Inventory & establish future management
#1	6.4	Dalhousie L4,CI	?	Inventory & establish future management
#4	3.1	Dalhousie L19,CVII	?	Inventory & establish future management
#6	0.7	Dalhousie L24&25,CIX	?	Inventory & establish future management
#7	2.9	Dalhousie L24,CIX	?	Inventory & establish future management

App. 4.2 FISHERIES MANAGEMENT DESIGNATION

Unsurveyed Warm-water Ponds

Lake Name	Area (ha)	Township	Species	Comments
#9	1.3	Dalhousie L19,CVIII	?	Inventory & establish future management
#11	3.6	Dalhousie L25,CX	?	Inventory & establish future management
#12	5.4	Dalhousie L25,CXI	?	Inventory & establish future management
61 Ponds	420.3 ha			

App. 5 FISHERIES MANAGEMENT DESIGNATION

Class 2 Cold-water Rivers and Streams

Name	Location (Twp. & Lat.&Long. of Mouth)	Length (km)	Area (ha)	Species Present	Comments
Bolton Cr.	Mississippi River	7.5c	1.9c		Surveyed 1974.
	44°57' 76°23'	34.4w	8.8w	BF NP	Introduce brown trout
	S.Sherbrooke, Bathurst	41.9	10.7	SMB	
Broadbrook Creek	Lt.Green Lk, White Lake	9.0w	2.3w	BT NP P CWS	Stocked with brook
	45°15' 76°34'	2.0c	1.0c	LMB RB BF	trout
	Darling Twp.	11.0	3.3		
Clyde River (Taylor Pond Creek)	Lavant, Darling, Lanark &	6.7c	8.8c	W NP SMB	Inventory.
	Drummond Twps.	30.8w	28.7w		Check brown trout
	44°59' 76°22'	37.5	37.5		potential
Craigs Creek	45°13' 76°36'	4.0	0.8	BT	Inventory
	Darling Twp				
Easton Creek	45°07' 76°96'	2.2c	0.5c	BT NP Pump	Stocked with brook
	Dalhousie, Lavant & Darling	10.2w	2.1w	P CWS	trout
	Twps.	12.4	2.6		
Fairs Creek	Patterson Lk. Miss. R.	1.0w	0.1w	BT NP P CWS	Obtain access, if
	44°58' 76°31'	3.6c	0.6c	Pump	possible
	Dalhousie Twp.	4.6	0.7		
Indian River	45°15' 76°14'	9.1c	3.6c	BT NP B	Continue experimental
	Darling, Lanark & Ramsay	42.3w	16.4w	SMB	brook trout
	Mississippi River	51.4	20.0		management
					Re-assess 1990

App. 5 **FISHERIES MANAGEMENT DESIGNATION**

Class 2 Cold-water Rivers and Streams

Name	Location (Twp. & Lat.&Long. of Mouth)	Length (km)	Area (ha)	Species Present	Comments
Kelley's Cr.	45°17' 75°31' City of Gloucester	10.5c	1.8C	BT RBT	Re-inventory
Long Sault Creek	Mississippi River 45°14' 76°28' Dalhousie Twp.	6.2w 6.0c 12.2	1.0w 2.1c 3.1	BT CWS P BF	brook trout stocked
Mud Creek	Ottawa River Lot 4,Con A&I 45°14' 75°41' Rideau Twp.	10.5c	1.7	BT	No access
Paul's Cr.	Dalhousie Lk 44°57' 76°35' Dalhousie Twp	11.2w 2.0c 13.2	2.8w 0.1c 2.9	BT P CWS Fall Fish, Pumpkinseed	brook trout stocked
Pooles Cr.	Lot 23,Con XI 45°17' 75°54' Goulbourn Twp.	10.0c	1.7	BT RBT	Urbanized, unsuitable for fisheries management
Shields Cr.	Thru Greely 45°17' 75°31' Gloucester Twp.	7.5c	1.3	BT RBT	brook trout stocked
13 streams		81.6 km c 145.1 km w	25.9 ha c 62.2 ha w		

App. 6 FISHERIES MANAGEMENT DESIGNATION

Class 2 Warm-water Rivers and Streams

Name	Location (Twp. & Lat.&Long. of Mouth)	Length (km)	Area (ha)	Species Present	Comments
Bearbrook	45°24' 75°16' Gloucester Cumberland	39.0w	15.2w	NP BH	Inventory
Becketts Cr.	45°31' 75°21' Cumberland Twp.	15.0w	3.1w	Bullhead (Spring)	Inventory
Bennys Cr.	45°06' 76°27' Lanark Twp.	5.5w	1.0w	SMB	Inventory
Black Cr.	44°46' 76°14' Black Lk Rideau Lk	13.0w	3.9w	Pump NP W CWS	Inventory
Black Cr.	44°54' 76°03' Drummond & N. Elm. Twps.	19.2w	4.0w	NP	Inventory
Black Cr.	45°15' 75°24' Osgoode Twp.	15.0w	3.0w	UK	Inventory
Black Rapids	45°19' 75°42' City of Nepean	2.0w	0.1w	UK	Inventory
Borthwick Cr.	45°24' 75°35' Gloucester	7.6w	1.7w	UK	Inventory
Brassils Cr.	44°58' 20" 75°43' Rideau Twp.	16.1w	2.9w	NP W BF	Inventory
Campbell Cr.	45°15' 76°19' Pakenham Twp.	7.5w	1.0w	UK	Inventory
Campbells Cr.	45°03' 76°18' Lanark Twp.	5.0w	0.5w	UK	Inventory
Carp R.	45°29' 76°13' West Carleton Twp.	57.8w	10.0w	SMB NP Bullhead	Inventory
Cartwright Cr.	45°22' 76°16' Pakenham	8.0w	2.5w	UK	Inventory
Cody Cr.	45°21' 76°16' West Carleton Twp.	35.0w	21.0w	RB Pump CWS	Inventory
Constance Cr.	45°28' 76°04' West Carleton Twp.	13.0w	12.5w	NP Bullhead W P (Spring)	Inventory

App. 6

FISHERIES MANAGEMENT DESIGNATION

Class 2 Warm-water Rivers and Streams

Name	Location (Twp. & Lat.&Long. of Mouth)	Length (km)	Area (ha)	Species Present	Comments
Cranberry Cr	45°05' 76°11' Beckwith Twp.	4.2w	0.8w	UK	Inventory
Cranberry Cr	45°01' 76°40' Dalhousie & Palmerston	6.0w	0.6w	UK	Inventory
Cranberry Cr	45°08' 75°38' Rideau Twp.	14.5w	2.0w	BI Crappie (at mouth) BH	Inventory
Davern Cr. (Little Fish Cr.)	44°44' 76°32' S.Sherbrooke Twp	7.0w	0.7w	NP W. CWS	Inventory
Dowdall Cr	45°07' 70°11' Beckwith Twp.	4.5w	0.9w	UK	Inventory
Fall River	44°52' 76°29' Bathurst, S.Sherb. Twps.	UK	UK	NP W SB	Inventory
Flower Lk Cr	45°10' 76°41' Lavant Twp.	6.0w	1.2w	W P CWS	Inventory
Forsythe Cr	45°17' 76°17' Pakenham Twp.	3.5w	0.3w	UK	Inventory
Glen Cr	45°18' 76°17' Pakenham Twp.	7.0w	1.0w	UK	Inventory
Gordon's Cr	44°54' 76°35' N.Sherbrooke Twp.	7.0w	0.7w	UK	Inventory
Graham's Cr.	45°21' 75°48' Nepean	UK	UK	UK	Inventory
Grants Cr.	44°53' 76°15' Bathurst Twp.	15.5w	6.0w	SMB NP W	Inventory
Green Cr.	45°28' 75°34' Gloucester Twp.	15.5w	13.6w	NP CWS	Inventory
Haley's Cr.	45°01' 76°16' Drummond Twp.	3.0w	0.3w	UK	Inventory

App.6 **FISHERIES MANAGEMENT DESIGNATION**

Class 2 Warm-water Rivers and Streams

Name	Location (Twp. & Lat.&Long. of Mouth)	Length (km)	Area (ha)	Species Present	Comments
Haydon's Cr.	45°18', 76°17' Pakenham Twp.	8.5w	1.0w	UK	Inventory
Hopetown Cr.	45°05' 76°26' Dalhousie Twp.	16.4w	2.6w	UK	Inventory
Huntley Cr.	45°19' 75°57' Huntley Twp.	16.7w	3.0w	UK	Inventory
Indian Cr.	45°18' 76°17' Darling Pakenham	27.5w	10.2w	NP P SMB BF	Inventory
Jebb Cr.	44°53' 76°11' North Elmsley Twp.	4.5w	1.7w	NP SMB	Inventory
Jock River	45°15' 75°42' Beckwith Goulbourn Nepean Twps.	84.5w	62.9w	NP W Musky RB SMB carp Ling	Inventory
Kings Cr.	47°07' 75°54' Goulbourn Twp.	20.0w	3.9w	NP BF	Inventory
Laceys Cr.	45°03' 15" 76°17' Lanark Twp.	13.0w	2.5w	BF	Inventory
LaFrance Cr.	45°07' 76°40' Lavant Twp.	11.0w	1.5w	BF	Inventory
Lavant Cr.	45°08' 76°38' Lavant Twp.	11.5w	1.6w	BF	Inventory
Leonard Cr.	45°30' 75°28' Cumberland Twp.	10.0w	4.0w	Bullhead CWS Pump P NP	Inventory
Limeklin Cr.	45°22' 76°57' Bathurst Twp.	5.0w	0.5w	BF	Inventory
Lt.Antoine Cr.	45°03' 76°40' Palmerston, Dalh., Lav.	25.0w	6.0w	UK	Inventory
Lt.Clyde R. (Gunns Cr.)	45°07' 76°28' Dalh. & Lanark Twps.	20.0w	7.4w	NP W SMB BF	Inventory

App.6 FISHERIES MANAGEMENT DESIGNATION

Class 2 Warm-water Rivers and Streams

Name	Location (Twp. & Lat.&Long. of Mouth)	Length (km)	Area (ha)	Species Present	Comments
Long Lake Cr. (Raycroft)	45°15' 76°34' Darling Twp.	4.5w	0.4w	NP W	Inventory
Majore Cr. (Black)	45°07' 76°31' Lavant Twp.	5.0w	0.5w	BF	Inventory
McCrearys Cr.	45°07' 76°11' Ramsay Twp.	4.0w	0.3w	SMB NP	Inventory
McEwen Cr.	45°23' 75°35' Gloucester	9.5w	0.5w	UK	Inventory
McKibbon Cr.	45°05' 76°09' Beckwith Twp.	2.5w	0.2w	NP SMB	Inventory
McKinnons Cr.	45°26' 75°30' Cumberland	11.0w	2.2w	UK	Inventory
McIntyre Cr.	45°02' 76°13' Bathurst Twp.	23.5w	4.9w	W BF	Inventory
McLaren's Cr.	44°58' 76°35' Dalhousie Twp.	6.0w	0.6w	UK	Inventory
Middle Branch Clyde Cr.	45°08' 76°41' Lavant Twp.	5.5w	0.7w	CWS	Inventory
Middle Castor River	45°15' 72°24' Osgoode Twp.	5.9c 27.1w --- 33.0	0.5c 2.3w --- 2.8	NP W BF	Inventory
Middleville Creek	45°02' 76°23' Lanark Twp.	11.1w	5.5w	SMB Pump P CWS BF	Inventory
Mississippi River	45°26' 76°17' N. Sherbrooke Twp.	92.5w	231.3w	W NP SMB CWS BF RRH	Intensive fish population and harvest assessment required
Mosquito Cr	44°58' 76°38' Dalhousie Twps.	8.5w	0.8w	UK	Inventory possible cold-water potential

App.6 FISHERIES MANAGEMENT DESIGNATION

Class 2 Warm-water Rivers and Streams

Name	Location (Twp. & Lat.&Long. of Mouth)	Length (km)	Area (ha)	Species Present	Comments
Nepean Cr	45°21' 75°42'	UK	UK	UK	Inventory
Nichols Cr	45°8'30" 75°52' Rideau Twp.	5.0w	0.5w	BF	Inventory
Nicolet Drain	45°23' 75°34' Gloucester	UK	UK	UK	Inventory
North Cr	44°58' 76°22' Bathurst	7.5w	1.4w	UK	Inventory
North Castor River	45°15' 75°13' Osgoode Twp.	2.9c 13.5w 16.5	0.5c 2.4w 2.9	NP BF O	Inventory
Ottawa River	45°31' 75°20' West Carleton Nepean Gloucester Cumberland Twps.	88.2w	7599.7w	NP SMB W P sturgeon, Gar Sauger BF	Intensive assessment required. Licence coarse fish fishery. Manage as warm-water angling fishery. Liaison with Ont. & Que. Hydro required.
Patterson Cr	44°23' 75°41' Nepean	UK	UK	UK	Inventory
Peterson Cr	45°06' 76°41' Lavant	11.0w	1.3w	UK	Inventory
Pilons Cr	45°08' 76°35' Lavant	12.0w	1.4w	UK	Inventory
Pinecrest Cr	45°22' 75°47' Nepean	UK	UK	UK	Inventory
Poland Cr	45°03' 76°32' Dalhousie	UK	UK	UK	Inventory
Purdon's Cr	44°58' 76°33' Dalhousie	10.5w	1.2w	UK	Inventory

App.6 FISHERIES MANAGEMENT DESIGNATION

Class 2 Warm-water Rivers and Streams

Name	Location (Twp. & Lat.&Long. of Mouth)	Length (km)	Area (ha)	Species Present	Comments
Ramsay Cr	45°24' 75°35' Gloucester	UK	UK	UK	Inventory
Rideau Cr	44°58' 75°49' Montague	12.0w	1.6w	NP BF	Inventory
Rideau R	46°26' 75°42' N.Elm., Montague, Rideau & Nepean Twps.	104.0w	260.1w	NP W SMB Musky SMB	Manage as warm-water sports fishery. Liaison with Parks Canada & city of Ottawa required. Continue periodic population & harvest assessments
Rosedale Cr	44°53' 75°56' Montague Twp.	14.0w	3.5w	NP CWS	Inventory
Scotts Snye	44°50' 76°20' Bathurst Twp.	UK	UK	UK	Inventory
Shaws Cr	45°23' 75°24' Cumberland	UK	UK	UK	Inventory
Shirleys brook	45°23' 75°55' March Twp.	15.0w	2.0w	NP spawn CWS Bullhead	Inventory
Sinclair Cr	45°05' 76°11' Beckwith Twp.	UK	UK	UK	Inventory
South Branch Clyde R.	45°7' 76°42' Lavant Twp.	13.5w	1.8w	NP W	Continue to manage centre section for rainbow trout
South Castor River	45°15' 75°23' Osgoode Twp.	5.3c 24.7w 30.0	0.5c 2.3w 2.8	W NP	Inventory
South Indian Cr	45°24' 75°15' Cumberland	UK	UK	UK	Inventory

App.6

FISHERIES MANAGEMENT DESIGNATION

Class 2 Warm-water Rivers and Streams

Name	Location (Twp. & Lat.&Long. of Mouth)	Length (km)	Area (ha)	Species Present	Comments
Stanley Cr	45°12' 76°20' Pakenham Twp.	8.0w	1.2w	UK	Inventory
Steven Cr	45°09' 75°38' Rideau Twp.	10.0w	2.0w	NP BH	Inventory
Stillwater Cr	45°20' 75°49' Nepean Twp.	UK	UK	UK	Inventory
Tay River	44°52' 76°06' S.Sherbrooke, Bathurst N.Elmsley Twps.	38.0w	45.0w	W SMB P NP LMB	Inventory
Taylor Pond (McReas Cr)	45°08' 76°38' Lavant	6.8w	1.0w	CWS	Inventory
Taylor's Cr	45°29' 75°29' Cumberland Twp.	UK	UK	UK	Inventory
Union Hall Cr	45°14' 76°16' Ramsay Twp.	6.6w	1.7w	BF	Inventory
Waba Cr	45°23' 76°20' Pakenham Twp	12.3w	3.1w	W	Inventory
Watts Cr	45°21' 75°53' March Twp.	10.0w	1.0w	BF	Inventory
Wesley Cr	44°50' 76°35' S.Sherbrooke Twp.	UK	UK	UK	Inventory
Wilson Cr	44°57' 76°36' Dalhousie Twp.	UK	UK	UK	Inventory
Wolf Grove Cr	45°13' 76°12' Ramsay Twp,	14.3w	5.3w	BF	Inventory
		14.1c	1.5c		
	Totals	1273.6w	8409.0w		

App.7 FISHERIES MANAGEMENT DESIGNATION

General

Fishery	Area	General Management Description
Cold-water single species lakes and streams	District Wide	Manage exclusively for cold-water species through hatchery support. Bait fish harvests permitted. Protect and enhance habitat.
Cold-water multiple species lakes and streams	District wide except Rideau Lake	Manage principally for cold-water fish through hatchery support. Manage warm-water species through natural recruitment. Protect and enhance habitat.
Warm-water lakes, rivers and streams	District wide except specially identified waters	Manage on basis of natural reproduction by retaining existing minimum size limits and creel limits, establishing seasonal sanctuaries. Protect and enhance habitat.
	Special project waters	See under individual lake name.

App. 8.1

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Existing Funding

Carleton Place District

Cold-water Sport Fisheries

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Provide cold-water opportunities	Continue stocking on pre-scheduled basis	**Brook trout** Bottle Lake Broadbrook Creek Dunks Lake Eastons Creek Green Lake Indian River Little Green Lake Long Sault Creek Minnow Lake Pauls Creek Kelly's Creek Peterwhite Lake Shield's Creek	annually	E	Demand for cold-water angling opportunities
		Rainbow trout South Clyde River	annually	E	Demand for cold-water angling opportunities
		Splake Brooke Lake Round Lake Perch Lake	annually	E	"
		Lake trout Silver Lake	annually	E	"
	Introduce brown trout into new waters	Clyde River (Pending E.A.) Bolton Creek	1989 1987	N N	" "
	Maintain present level of access development subject to details outlined in App.12.	Perch Lake Brook Lake Dunks Lake Darling Long Lake	annually	E	"

App. 8.1 Continued FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Existing Funding

Carleton Place District

Cold-water Sport Fisheries

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Control cold-water over-exploitation where needed	Eliminate ice fishing	Silver Lake Big Rideau Lake	1987	E	Over-harvest of existing stocks
	Reduce lake trout creel limit from 3 to 2	"	1989	E	"
	Prohibit use of herring for bait	"	1989	E	"
Protect and enhance Cold-water habitat	Maintain shoreline timber reserves on Crown Land	All Crown Land waters	1987-91	E	Near shore habitat degradation
	Control shoreline and littoral zone alterations through enforcement of Fisheries Act, Public Lands Act, Lakes & Rivers Improvement Act, etc.	All District waters	1987-91	E	"
	Rehabilitate degraded spawning beds on cold-water lakes and streams, where required	Silver Lake	annually	E	Impaired natural reproduction
		One trout stream annually	1987-91	E	"
	Integrated fisheries concerns with forest management planning as outlined in App.12	District wide	annually	E	Control road types & construction, log dump locations, access locations. Reduce erosion problems, maintain shade; address aesthetic concerns

App. 8.1 Continued

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Existing Funding

Carleton Place District

Cold-water Sport Fisheries

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Protect and enhance cold-water fish habitat	Integrate fisheries concerns with parks planning activities	Provincial Parks	annually	E	Habitat protection Use designation Parks classification
	Stop further sales of Crown owned shorelines along cold-water streams and lakes	District wide	1987-91	E	Littoral zone protection. Access preservation. Aesthetic concerns Erosion prevention
Implement rule curve favourable for cold-water fish production	Cooperate with all agencies to develop water regimes suitable for fish production and fish survival	District wide	annually	E	Impaired natural reproduction of lake trout and whitefish. Midwinter fish kills
	Construct outflow control structure to regulate oxygen household. Reintroduce rainbow trout if not successful introduce muskellunge	Darling Long Lk.	1989	N	De-oxiginated lower levels

App. 8.2

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Existing Funding

Carleton Place District

Warm-water Sport Fisheries

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Protect warm-water fish habitat	No further sales of Crown-owned shoreline reserves	District wide	1987-91	E	Littoral zone protection
	Enforce habitat sections of relevant statutes	District wide	1987-91	E	Habitat protection
	Encourage formulation of appropriate municipal legislation i.e. setbacks, E.P. Zones	District wide	1987-91	E	Habitat protection
	Assist lake assocations to organize self-help groups	District wide	1987-91	E	Habitat protection
	Review Timber Mgt. Plans Municipal Plans, Parks Plans Drains Plans Severances Subdivision Plans Highway construction and road proposals	District wide	1987-91	E	Habitat preservation
	Review and comment on water exterminations (mechanical & chemical)	District wide	1987-91	E	Nursery area preservation
	Integrate fisheries concerns with forest mgt. planning, as outlined in App.12	District wide	1987-91	E	Control road type & construction, log dump location, access construction near lakes & streams, maintain shade, address aesthetic concerns

App. 8.2 FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Existing Funding

Carleton Place District

Warm-water Sport Fisheries

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Protect warm-water fish habitat cont'd.	Integrate fisheries concerns with parks planning activities	Prov. Parks	annually	E	Habitat protection Use designation Parks classification
Reduce exploitation rates on walleye & pike communities & increase spawning potential	Implement slot size limit of 35cm to 50cm for walleye on an experimental 10 year basis. Maintain current season and creel limits	designated waters - White, Christie and Pike Lakes	1990	N	Overharvest reduced. Most production spawners protected Catch frequency increased. Pan fish populations
	Implement larger minimum size for walleye on experimental basis to permit females to spawn at least twice before being harvested	Bennett, Clayton and Taylor Lakes	1990	N	reduced by top predator predation. Harvest of trophy sized fish increased.
	Change Division 10 boundary to include Lavant, Darling & Pakenham Townships	All waters in Lavant, Darling & Pakenham Townships	1990	N	Winter fishery reduced by one month. Simplification of regulations.

App. 8.2

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Existing Funding

Carleton Place District

Warm-water Sport Fisheries

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Reduce exploitation rates of walleye and pike communities	Shorten walleye-pike season to March 15	Waters in Division 9	1990	N	Protect adult fish congregating prior to spawning
	Actively enforce limits and seasons	All district waters	1987-91	N	Illegal harvest curtailed.
	Promote catch and release sport fishery	District wide	1987-91	N	Reduces exploitation
	Encourage greater use of river fisheries	District wide	1987-91	N	Reduces pressure on lake fisheries.
Re-balance fish communities	Encourage harvests of pan fish	District wide	1987-91	N	Increases use of under-utilized species.
	Implement restricted coarse fish and panfish commercial fisheries; live gear only pending public consultation	White Lake Pike Lake Bennett Lake Black Lake Clayton Lake Rideau River	1988-91	N N N N N N	Removes over-aged coarse fish. Increases food supply of game fish.
	Carry out coarse fish removals under CFIP where volunteer groups show an interest	Pike Lake Christie Lake Black Lake	1988-91	N	Same as above
Protect spawning fish stocks	Declare seasonal fish sanctuaries in key locations	Dalhousie Lake Clayton Lake and other waters as required	1988	N	Reduce disturbance and incidental take of game fish

App. 8.2

Existing Funding

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Carleton Place District

Warm-water Sport Fisheries

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Implement water level management favourable to maximize fish production through liaison with appropriate agencies	Maintain constant flow over walleye spawning sites between March 20 and May 10	All walleye spawning sites where control structures exist	1987-91	E	Littoral zone and spawning area dry-out prevented
	Implement "modified natural water regime" on the following lakes. Stabilize for winter by September	Bennett, Pike, Widow, Park, Kerr, Mississippi, White, Horne, Stump and Bobs Lakes	1987-91	E	Shore spawning enhanced, algae blooms reduced

App. 8.3 FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Existing Funding

Carleton Place District

Bait Fish Management

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Protect and maintain existing baitfish populations as forage species and as a commercial resource	Prevent over-exploitation of baitfish populations by limiting entry into the industry	District wide	1987-91	E	Maintain viable industries; protect populations.
	Monitor harvests through annual returns and field inspections	District wide	1987-91	E	As above
	Prevent introduction of competitive species or the spread of disease through inspections and enforcement	District wide	1987-91	E	As above
	Enforce compliance with District bait fish holding and transporting standards through field inspections and enforcement	District wide	1987-91	E	Prevention of bait fish mortality.
Harvest wild natural surplusses	Encourage greater use of unused waters	Ottawa River	1987-91	E	Shortage of bait fish supplies
	Implement the exclusive bait fish-block system through attrition	District wide	1987-91	E	Encourages husbandry of resources
	Eliminate 5 harvest licences by attrition where overlaps occur	District wide	1987-91	E	As above
Promote bait fish Culture	Encourage use of municipal sewage lagoons as holding ponds	District wide	1987-91	E	Improves availability of supplies in times of shortages.

App. 8.3

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Existing Funding

Carleton Place District

Bait Fish Management

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
	Encourage bait fish production in abandoned quarries, borrow pits, etc.	District wide	1987-91	E	Improves availability of supplies in times of shortages.
	Encourage the establishment of private bait fish culture stations	District wide	1987-91	N	As above.
Revise licencing	Establish a system for licencing on the basis of provincial guidelines	District wide	1990	N	Fairness in resource use allocation

App. 8.4

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Existing Funding

Carleton Place District

Commercial Fisheries

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Activate existing operations for the harvest of pan fish and coarse fish species	Set minimum production targets. If underachieved review licence, curtail area or cancel	Ottawa River	1988	E	Licence not being utilized
	Continue to manage on the basis of quotas	Ottawa River	1988	E	As above
	Enforce commercial fishing regulations re: harvests, seasons, marking of nets, etc.	Ottawa River	1988	E	Inaccurate and untimely reporting
	Licence additional operator on presently licenced waters	Ottawa River	1988	N	Under-utilization of area at present
Protect sturgeon stocks	Reduce sturgeon quotas	Ottawa River	1988	N	Population in serious state of decline
Develop new commercial fisheries where required	Licence periodic, restricted coarse fish and pan fish commercial fisheries in inland sports fishing waters to re-balance populations. Live gear only.	Rideau River White Lake Pike Lake Bennett Lake Black Lake Clayton Lake Mississippi Lake	anytime	N	Over population of pan fish and bull-heads

App. 8.5

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Existing Funding

Carleton Place District

Rare & Endangered Species

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Protect the habitat and maintain populations of rare and endangered species	Prevent harvests of the River Redhorse sucker by establishing a sanctuary	Mississippi River between Almonte and Pakenham	1990	N	Assure survival
	Prevent the construction of dams, diversions, etc. in habitat which is essential for the survival of endangered species.	District wide	1987-91	N	Assure survival
Inform & educate the public regarding the status of rare or endangered species	Issue news releases	-----	1987-91	N	Assure public support for the protection of rare species.
	Address interest groups	-----	1987-91	N	Same as above.

App. 8.6

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Existing Funding

Carleton Place District

Scientific & Management Information

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Collect utilization and harvest data (See App. 10)	Stratified summer creel 5 lakes/year in a 3 year rotation. *	District wide	annually	E	Determines harvest and utilization levels
	Stratified winter creel 5 lakes/year in a 6 year rotation. *	District wide	1988, 1990	E	As above.
	Creel census 5 trout streams/year in a 6 year cycle. *	District wide	1989	N	As above.
Fish population studies (See App. 10)	Assessments in major warm-water fisheries by means of netting surveys in 5 year rotations. *	District wide see schedule	annually	E	Determines population status.

* Includes data analysis & report writing

App. 8.7

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Existing Funding

Carleton Place District

Public Awareness

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Increase public awareness & support for fisheries management and fisheries habitat issues	Prepare 4 news releases annually	Local press	annually	N	Maintain public awareness
	Expand media coverage on fisheries projects	Local T.V.	annually	N	As above
	Expand radio and TV coverage on fish habitat preservation and the value of fisheries as environmental health indicators	Local media	annually	N	As above
	Attend meetings of local Fish and Game Clubs, lake associations, municipalities	As required	annually	E	Improves public understanding
	Distribute district fishing maps	Carleton Place	annually	E	General public service
	Assist community groups such as MAPLE in promoting habitat awareness	District wide	annually	E	Encourages public self-help programs
Generate internal understanding	Organize one internal fisheries presentation to all district staff	Carleton Place	annually	N	Improves public relations capability of all staff

App. 8.8

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Existing Funding

Carleton Place District

Enforcement

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Harvest control	Winter - ice fishing checks	District wide	annually	E	Control out-of-season fishing Prevent overharvest
Habitat enforcement	Aerial reconnaisance	District wide	annually	E	Spotting of illegal dredge and fill operations
	Expand shoreline investigations	District wide	annually	E	Investigating and prosecuting illegal fish habitat alterations
Commercial fisheries enforcement	Gillnet and hoopnet fishery checks	District wide	annually	E	Checking for net mortality, seasons, gear, catch composition
	Bait fish dealer enforcement	District wide	annually	E	Checking of operating standards, fish mortality, records, species
	Bait fish harvester enforcement	District wide	annually	E	Checking harvest locations, gear, species, transporting equipment

App. 9.1

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Additional Funding
(Subject to change depending on funds allocation)

Carleton Place District

Cold-water Fisheries

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Provide cold-water opportunities	Access agreements 2 per year	Murray Lake Napier Lake Davern Lake Other lakes and streams	1988 1988 1989	N	Shortage of cold-water opportunities
	Encourage development of additional private fishing areas	Abandoned quarries near Ottawa	annually	N	Same as above.
	Increase stream stocking after rehabilitation	As required	annually	N	Same as above.
	Reclaim cold-water lakes by use of piscicides. E.A. required.	Little Green Lake	1989	N	Invasion of spiney-rayed fishes
		Big Green Lake	1990	N	Same as above
	Reconstruct dam and reclaim by poisoning.	Paddy Lake (pending E.A.)	1991	N	Rehabilitate a very popular trout fishery directly adjacent to a public park site
	Stocking of lakes under access agreement	Murray Napier Davern etc.	1988 1988 1989	N	Shortage of cold-water opportunities

App. 9.1 FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Additional Funding **Carleton Place District**
(Subject to change depending on funds allocation)

Cold-water Fisheries

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Improve cold-water fishery habitat	Encourage cottage associations to commence voluntary shoreline rehabilitation projects on cold-water lakes	Rideau Lakes	1987-1991	N	Impaired littoral zone
		Silver Lake	1987-1991	N	"
	Encourage Fish & Game clubs to "adopt-a-stream" and carry out habitat enhancements through CFIP - depends on Club interest	Eastons Creek	annually	N	Stream degradation
		Indian River	"	N	"
		Bolton Creek	"	N	"
		Long Sault Creek	"	N	"
		Pauls Creek	"	N	"
		Broadbrook Creek	"	N	"
		Kelly's Creek	"	N	"
		Shields's Creek	"	N	"
		etc.			
	Rehabilitate cold-water streams	South Clyde	1988	N	Impaired habitat
		Mosquito Creek	1989	N	
		Black Creek	1990	N	
		Little Antoine Cr.	1991	N	

App. 9.2

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Additional Funding
(Subject to change depending on funds allocation)

Carleton Place District
Warm-water Fisheries

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Shift angling pressure to underutilized communities	Develop public access points - one per year	Upper Ottawa River*	1988	N	Provide increased angling opportunity
		Lower Ottawa River*	1989	N	"
		Bennett Lake*	1990	N	"
		Farren Lake*	1991	N	"
Protect warm-water fish habitat	Increase shoreline inspection program	District wide	1988	N	Habitat protection
Rehabilitate or improve fish habitat	Improve walleye spawning areas - one per year	Park Lake	1988	N	Improves natural recruitment
		Bennett Lake	1989	N	
		Mississippi Lk.	1990	N	
		Lower Rideau Lk.	1991	N	
	Support habitat enhancement projects initiated by interst groups through CFIP	Christie Lake Mississippi Lake Pike Lake Black Lake Otty Lake Bennett Lake Dalhousie Lake	when volunteer group interest exists	N	Rehabilitates spawning areas, nursing areas and littoral zone

* = Access rental or purchase required in addition to above $.

App. 9.2

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Additional Funding
(Subject to change depending on funds allocation)

Carleton Place District

Warm-water Fisheries

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Rehabilitate or improve fish habitat	Annual stream spawning clearance through CFIP	Black Lake White Lake Pike lake	1987-1991	N	Rehabilitates key spawning area
	Identify additional lake & stream habitat improvement locations	District wide	1987-1991	N	Background for future habitat related project formulation
Provide fishing opportunities	Attempt to obtain access to warm-water lakes which are surrounded by private land	not specified	annually	N	Provide increased angling opportunities
Identify and protect sturgeon spawning habitat	Ottawa River Inventory	Ottawa River	1989-1991	N	Sturgeon population declining rapidly

App. 9.3

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Additional Funding

Carleton Place District

(Subject to change depending on funds allocation)

Commercial Fisheries

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Protect sturgeon recruitment and stocks	Investigate size/maturity parameter of Ottawa River populations	Ottawa River	1990	N	Specific info. not available
	Amend minimum mesh size and minimum size limit regulations if warranted	Ottawa River	1991	N	Assure adult sturgeon spawn at least twice prior to harvest
	Determine incidental catch of sturgeon in carp gill nets	Ottawa River	1989	N	Specific info. not available
	Identify and protect sturgeon spawning habitat	Ottawa River	1989-91	N	Information not available
	Intensify sturgeon related enforcement	Ottawa River	1989-91	N	Inter-provincial problem suspected

App. 9.4 FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Additional Funding **Carleton Place District**

(Subject to change depending on funds allocation)

Rare & Endangered Species

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Protect the habitat and populations of rare or endangered species	Carryout habitat and population inventories for rare or endangered fish	District wide where required	1990	N	Identify extent of problem.

App. 9.5

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Additional Funding
(Subject to change depending on funds allocation)

Carleton Place District

Scientific & Management Information

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Update lake and stream inventories	Obtain winter and summer limnological profiles	District Wide	1989 through 1991	N	Monitor population and habitat changes
	Carryout complete inventory surveys in unsurveyed waters and waters suspected of species change	District wide	1989 through 1991	N	Obtain background information
Collect utilization and harvest data	Aerial summer and fall boat count of 40 stratified flights covering 40 fisheries. Return cycle 6 years	District wide	1990 (1996)	N	Determines utilization pattern and preferences
	Carryout periodic assessment by gill netting, trap netting, hoop netting, electro fishing, creel census	trout lakes and stocked warm-water lakes	annually	N	Establish effectiveness of stocking as contribution to fish populations.
Intensive follow-up to experimental management	Trap net assessments	Pike, Clayton-Taylor and Black Lakes	annually 1995	N	Compare impact of minimum and slot size limits on 6 test lakes and 3 control waters
		Dalhousie, Bennett, Christie Lakes	1990	N	"
		White & Mississippi Lakes	1990	N	"

App. 9.5

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Additional Funding
(Subject to change depending on funds allocation)

Carleton Place District

Scientific & Management Information

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Intensive followup to experimental management	Summer creel census	Pike, Clayton, Black	1989	N	Establish impact of slot size limit upon angling success and angler harvests
	Summer creel census	Dalhousie, Bennnett, Christie	1990	N	"
		White, Mississippi	1991	N	"
	Electro fishing natural recruitment survey	Pike, Clayton, Black, Dalhousie, Bennett, Christie, White, Mississippi Lakes	annually from 1989	N	Establish impact of slot size limits upon natural recruitment of target species and forage fish
	Electro fishing followup to Brown trout introduction	Bolton Creek	1988, 90,	N	Establish success or failure of introductions and establish if natural reproduction is taking place
	"	Clyde River	1989, 1991	N	"
Determine sturgeon management needs	Investigate size/ maturity parameter of local fish	Ottawa River	1990	N	Biological info. not available
	Determine incidental catch of sturgeon in carp gill nets	Ottawa River	1989	N	Specific info. not abailable

App. 9.6

FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Additional Funding
(Subject to change depending on funds allocation)

Carleton Place District

Public Awareness

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Increase public awareness & support for fisheries management and fisheries habitat issues	Lecture at schools	As required	annually	N	Improve public understanding
	Organize lake association workshops	As required	annually	N	As above
	Organize teacher workshops	Carleton Place	1989-91	N	As above
Generate public understanding & support for fisheries related issues	Compile maps and handout material from creel census and survey data	Carleton Place	annually	N	Improves specific public awareness
	Prepare handout material regarding lakeshore development and habitat preservation	Carleton Place	annually	N	As above
	Conduct periodic open houses for general public information	Ottawa Carleton Place	1989 and 1991	N	As above

App. 9.7 FISHERIES MANAGEMENT IMPLEMENTATION SCHEDULE 1987 - 1991

Additional Funding **Carleton Place District**

(Subject to change depending on funds allocation)

Fisheries Enforcement

Strategy	Tactic	Location	Year	N/E	Issue/Problem Addressed
Harvest control and public relations in specified high profile fisheries	Scheduled patrols in waters with experimental management regulations	Dalhousie Bennett White Mississippi Clayton Pike Black Christie	1989 to 1992 annually	N	Assure compliance with new regulations and generate public understanding and acceptance.
Protection of sturgeon stocks	Scheduled intensified patrols of commercial fishing operations	Ottawa River	1988 to 1991 annually	N	Inter-provincial problem suspected. Under-sized mesh suspected.

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10 YEAR FISHERIES ASSESSMENT SCHEDULE 1988 - 1997

Carleton Place District

Year	NETTING SURVEYS: Spring Trapnets or hoopnets general	Spring walleye	Summer Gillnets	Fall Trap or hoopnets general	Fall walleye	CREEL CENSUS AND LIMNOLOGICAL PROFILES: Summer	Walleye Study	Winter	ELECTROFISHING	AERIAL BOAT COUNT
1988	Otty Silver	Robertson	Silver		Joe Park Flower	Constance Otty Silver Farren Pike Black			Bolton Creek	
1989	Rideau I Christie White		Green	Patterson Little Silver		Rideau Christie White Clayton Dalhousie	Robertson Joe Park Flower	Christie White Mississ. Bennett	Robertson Lk. Joe Lake Park Lake Flower	40 lakes
1990	Mississippi Bennett	Robertson	Peterwhite		Joe Park Flower	Patterson Long Mississippi Bennett Black			Bolton Creek	
1991	Rideau II Pike Black		Brook's	Constance Brooks		Rideau I Pike Black White Constance	Robertson Joe Park Flower	Black Pike Dalhousie Constance Ottawa II	Robertson Lk. Joe Lake Park Lake Flower Lake	
1992	Clayton Dalhousie	Robertson	Little Green		Joe Park Flower	Clayton Pike Dalhousie Christie Ottawa I			Bolton Creek	

App. 10

10 YEAR FISHERIES ASSESSMENT SCHEDULE 1988 - 1997

Carleton Place District

	NETTING SURVEYS					CREEL CENSUS AND LIMNOLOGICAL PROFILES			ELECTROFISHING	AERIAL BOAT COUNT
	Spring		Summer	Fall						
	Trapnets or hoopnets			Trap or hoopnets						
Year	general	walleye	Gillnets	general	walleye	Summer	Walleye Study	Winter		
1993	Farren Otty Silver		Farren	Ottawa I		Farren Otty Silver Long Patterson	Robertson Joe Park Flower	Brookes Farren Bottle Peterwhite		
1994	Rideau I Christie White		Perth		Joe Park Flower	Rideau I Pike Christie White Constance		Christie Bolton Creek Black White Bennett Pike		40 lakes
1995	Mississippi Bennett Rideau II		Bottle Dunks	Ottawa II		Mississippi Little Silver Bennett Black Rideau II Ottawa II				
1996	Pike Black		Paddy	Little Silver		Pike Black Farren Otty Ottawa I		Green Lt. Green Bolton Creek Dunks Patterson		
1997	Clayton Dalhousie			Patterson		Clayton Patterson Dalhousie Rideau I Rideau II				

Potential C.F.I.P. Projects

Name	Description	Location
Trout stream suitability assessment	Measuring summer temperature and flow rates of small streams	Numerous headwaters in Cumberland Township Osgoode Township Pakenham Township
	Mapping cold-water sections	Ramsay Township also (Big) Clyde River
	Obtaining access agreements	Bolton Creek Mosquito Creek Antoine Creek Black Creek South Branch Clyde Fairs Creek
Angling catchability check on specified lakes	Schedule controlled angling catch and release events on specified waters to augment creel data. Maintain accurate records.	Robertson Lake Park Lake Joe Lake Flower Round Bottle Lake Green Lake Peterwhite Lake other waters as required
Walleye spawning bed improvement	Placing of rock rubble into suitable fast water or placing current breakers into fast water	Port Elmsley Innisville Park Lake Lower Dalhousie Pike Lake Black Lake Burritts Rapids Doran's Rapids 9th Line Drummond Raycroft Creek
	Remove beaver dams blocking spawning sites	Raycroft Creek Fish Creek (White Lake) Black Lake Lower Jebbs Creek Kerr Lake
Shelter and nursing areas	Placing of artificial reef structures in locations lacking shelter	Dalhousie Lake Little Green Lake Flower Round Lake Silver Lake other waters, as required

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Potential C.F.I.P. Projects

Name	Description	Location
Trout stream maintenance	Beaver dam removal Erosion control Shelter Construction	Eastons Creek Long Sault Creek Indian Creek Pauls Creek South Clyde Creek Kelly's Creek Bolton Creek
Coarse fish removal	Winter hoopnet fishery for ling	Christie Lake Black Lake Pike Lake
Pan fish reduction fishery	Summer pan fish derbies keeping accurate records	Mississippi Lake Black Lake Christie Lake Clayton/Taylor Lake White Lake other waters as required
Trout lake rehabilitation	Construct pike access exclosure weir; Remove warm-water fish by intensive gill netting; Restock with rainbow trout	Paddy Lake
	Construct water outflow control structure to rehabilitate oxygen household	Darling Long Lake

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SILVICULTURAL GROUND RULES FOR CROWN TIMBER OPERATIONS NEAR WATER

Carleton Place District

PHYSICAL FEATURE OR VALUE	CONCERNS	TIMBER MANAGEMENT PRESCRIPTION
Class 1 Lakes (those waters which are capable of providing high quality angling, a special trophy species, or a wilderness type atmosphere)	- Aesthetics/skyline, wilderness experience - siltation/erosion - water level changes - water temperature changes - changes in food source - damage to spawning beds - increased access	- Modified timber management operations may be permitted adjacent to the shoreline, with a no harvesting zone designated according to slope. In general, the area of concern will be a 100 m zone parallel to the shoreline. The no harvest zone will be as follows: Slope: 0 - 30% — Width of No Harvesting Zone: 50 metres 31 - 45% — 75 metres 45 + % — 100 metres - where appropriate, a variable width skyline reserve may be implemented - there will be no road or landing construction allowed within the 100 metre area of concern - location of log landings and hauling roads within 500 m of Class 1 lakes subject to joint agreement between Forest Management and Fish & Wildlife staff. - to maintain the aesthetics of shorelines, regeneration operations to promote white pine may be undertaken - to promote young poplar growth adjacent to the water's edge for beaver food stock, some felling of mature poplar may be undertaken - a joint site inspection between the Division of Forests and Fish & Wildlife will be undertaken prior to any operations occurring within the 100 m area of concern

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SILVICULTURAL GROUND RULES FOR MODIFIED OPERATIONS

Carleton Place District

PHYSICAL FEATURE OR VALUE	CONCERNS	TIMBER MANAGEMENT PRESCRIPTION
All other lakes and streams including Class 2 lakes (principal fisheries) and Class 3 Lakes (general recreation)	- siltation/erosion - water level changes - water temperature changes - changes in food sources - damage to spawning beds - increased access	- guidelines similar to those outlined for Class 1 Lakes except that modified operations may be permitted to the shoreline, depending on forest stand types, and the value to be protected - the width of the area of concern is defined based on slope as follows: Slope — Width of Area of Concern (zone of Modified Operation) 0 - 30% — 50 metres 31 - 45% — 75 metres 45 + % — 100 metres - the location and type of stream crossings will be assessed individually - no road construction within area of concern unless to access crossing - maintain minimum of 30 m no cut reserve at crossing - no skidder traffic in area of concern less than 50 m - use cable and winch For all Working Groups: - for areas of concern > 50 m, maintain minimum BA - 10m^2/ha in zone between 50 m and 100 m - for areas of concern < 50 m, maintain BA 14m^2/ha - declining trees may be removed - regenerate area naturally or by planting

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SUMMARY OF PUBLIC PARTICIPATION AND CALENDAR OF EVENTS

CARLETON PLACE DISTRICT FISHERIES PLANNING PROCESS

Background data document	December 1986
Invitation to participate	February 1987
Background Summary distribution, 200 copies	March 1987
First public meeting Carleton Place	April 1987
Public Feedback	May 1987
Southern Ontario presentation of fish planning documents to A.D.M.	May 1987
Posters distributed	September 1987
Tabloid distributed (included invitation to public meetings) 2,500 copies	September 1987
Public Feedback	October 1987
Public meetings Perth and Ottawa	October 1987
Real Estate seminar	November 1987
Press meeting	November 1987
First Draft Plan mailed to general public, 300 copies	December 1987
Opportunity for feedback	January 1988
Final Draft review	May - June 1988
Regional approval	August 1988
Final Plan mailing to interest groups and public	September 1988

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